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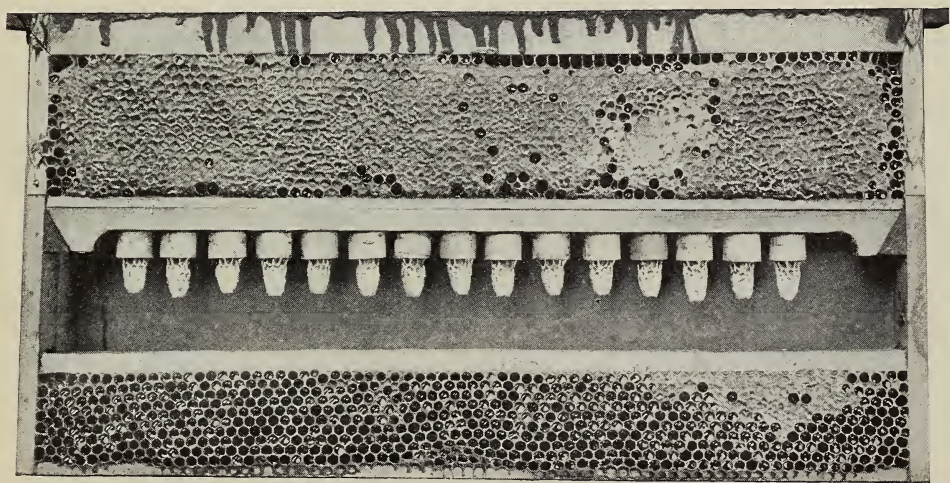


# Gleanings in Bee Culture

VOL. XXXVII

NOVEMBER 15, 1909

NO. 22



A SAMPLE OF CELL-BUILDING ON WOODEN CUPS AT THE PUBLISHER'S HOME YARD.



PUBLISHED BY

THE A. I. ROOT COMPANY, MEDINA, OHIO, U. S. A.

# Philo : National : Poultry Institute



## Learn to Make Poultry Pay

We teach poultry-keeping in all its branches by mail, or by demonstration at the greatest poultry institute in the world. The home of the

## Philo System.

Fresh-laid eggs are considered the most perfect food, and any one can learn to produce them at a profit. With the improved methods taught in our schools

## A Successful Business and Good Living

may be had on a city lot or a small plot of ground in the suburbs, or in the country. Poultry-keeping is really a science. To get the greatest returns, all branches of the work must be thoroughly understood. A short course is all that is necessary to make the business a success, and to avoid the mistakes so common with those who do not understand the work.

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by mail or at our National Poultry Institute, where thousands of the finest birds are raised annually. With our improved methods it is possible to handle the business with a very small capital, or students can get employment at good salaries.

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**Philo National Poultry Institute, Elmira, New York**  
Lake Street



# Falcon Foundation

We use it . . . . . and . . . . . like it.  
 If you use it . . . . . you will like it.  
 The experiences of the most prom-  
 inent bee-keepers prove that . . . the bees like it.

'Tis not marvelous, for FALCON Founda-  
 tion has reached the PERFECT state.

Send for our catalog of bee-supplies, and ask for our Special  
 Prices on Comb Foundation. Samples will be mailed on request.

## Beeswax Wanted

We pay the HIGHEST MARKET PRICE. Write to us for quo-  
 tations, and we will send you shipping-tags.



## Falcon Square Jars

Honey can not be put up in more attractive pack-  
 ages for exhibition purposes or the grocery trade than in  
 glass, and for this purpose the square honey-jar is best  
 and most convenient, besides economizing space. Prices:

5-oz. with cork stoppers.....	{ \$2.25 per crate of 100
	{ \$1.25 per crate of 50
8-oz. with spring top.....	{ \$3.75 per crate of 100
	{ \$2.00 per crate of 50
1-lb. with spring top.....	{ \$4.75 per crate of 100
	{ \$2.50 per crate of 50

The glass top with spring attachment is the only  
 absolutely safe method of bottling honey, as corks and  
 screw-caps will leak. Still, we furnish the 1-lb. and the  
 8-oz. jars with corks, for those who desire them, at 75 cts.  
 per 100 less and 40 cts. per 50 less than with the spring  
 top. We do not sell less than crate lots.

## W. T. Falconer Manufacturing Co.

Jamestown, New York, U. S. A.

## Honey Markets

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchant. When sales are made by commission merchants, the usual commission (from five to ten per cent), cartage, and freight will be deducted, and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage, and other charges, are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

### EASTERN GRADING RULES FOR COMB HONEY.

**FANCY.**—All sections well filled, combs straight, firmly attached to all four sides, the combs unsoiled by travel-stain or otherwise, all the cells sealed except an occasional one, the outside surface of the wood well scraped of propolis.

**A No. 1.**—All sections well filled except the row of cells next to the wood; combs straight; one-eighth part of comb surface soiled, or the entire surface slightly soiled; the outside surface of the wood well scraped of propolis.

**No. 1.**—All sections well filled except the row of cells next to the wood; combs comparatively even; one-eighth part of comb surface soiled, or the entire surface slightly soiled.

**No. 2.**—Three-fourths of the total surface must be filled and sealed.

**No. 3.**—Must weigh at least half as much as a full-weight section.

In addition to this the honey is to be classified according to color, using the terms white, amber, and dark; that is, there will be "Fancy White," "No. 1 Dark," etc.

### NEW COMB-HONEY GRADING-RULES ADOPTED BY THE COLORADO STATE BEE-KEEPERS' ASSOCIATION.

**No. 1 WHITE.**—Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber, comb and cappings white, and not projecting beyond the wood; wood to be well cleaned; cases of separated honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

**No. 1 LIGHT AMBER.**—Sections to be well filled and evenly capped, except the outside row, next to the wood; honey white or light amber; comb and cappings from white to off color, but not dark; comb not projecting beyond the wood; wood to be well cleaned.

Cases of separated honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separated honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 23 pounds net per case of 24 sections.

**No. 2.**—This includes all white honey, and amber honey not included in the above grades; sections to be fairly well filled and capped, no more than 25 uncapped

cells, exclusive of outside row, permitted in this grade, wood to be well cleaned, no section in this grade to weigh less than 12 ounces.

Cases of separated honey to average not less than 19 pounds net.

Cases of half-separated honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparated honey to average not less than 21 pounds net per case of 24 sections.

**KANSAS CITY.**—The supply of comb honey is much larger; demand fair; the receipts of extracted are fair; demand not heavy. We quote No. 1 white comb honey, 24 sections, \$3.10 to \$3.25; No. 2 white and amber, 24 sections, \$3.00; white extracted, 7. Beeswax, 25 to 30. Nov. 1. C. C. CLEMONS PRODUCE CO.

**PHILADELPHIA.**—The demand for comb and extracted honey has been very heavy during the past few weeks, which has stiffened the prices somewhat. Large lots have been moved at good prices. We quote fancy white, 17 to 19; No. 1, 15; amber, 14; extracted white in 60-lb. cans, 10; amber in barrels, 7; in cans, 8. Beeswax, 29. Nov. 8. WM. A. SELSER.

**ST. LOUIS.**—We have to report a rather slow and dragging market, especially for comb honey. Extracted honey is in fair demand, mainly for amber. The higher grades of white honey sell very slowly. We quote fancy white comb honey at 16 to 17; choice amber, 13 to 15; dark or granulated, nominal at 8 to 10. Broken or leaking honey sells at much less. Extracted white from Colorado and the Pacific coast, in five-gallon cans sells at 8 to 9; amber in five-gallon cans, 7 to 7½; same in barrels, 6½ to 7. Beeswax, 30 for choice pure; all impure and inferior, less. Nov. 4. R. HARTMANN PRODUCE CO.

**CHICAGO.**—No material change in the honey situation, except trade on this commodity is keeping up remarkably well on both comb and extracted honey. This especially applies to Wisconsin white-clover comb honey, of which there is a scarcity; and judging from the amount of inquiries and sales we seem to be the only firm that has any stock of that kind to offer. Colorado and California comb honey is also selling very freely. Quote our market as follows: Fancy white Wisconsin clover comb honey, put up in 24-section flat cases, style of section 4½x4½, at 16½ to 17. No. 1, white, 15½ to 16½. No. 1 white Colorado comb honey, 24-section double-deck cases with glass fronts, at \$3.50 per case. No. 1 white California comb honey, 24-section cases with wood slides, 14 to 15. Off grades of comb honey at correspondingly less prices, depending upon condition and quality. Extracted fancy water-white alfalfa, 60-lb. cans, two cans to the case, at 7½. Southern California light-amber extracted honey, 60-lb. cans, two cans to the case, 7¼ to 7½. Fancy Wisconsin white-clover and basswood extracted honey, 60-lb. cans, two cans to the case, or kegs, 8½ to 9. Bright pure beeswax, firm at 30 to 32. Nov. 8. S. T. FISH & CO.

Honey Markets continued on page 5.

## DELICIOUS HONEY. . . .

Our second car of Sage Honey has arrived. The first sold like "hot-cakes" in crates of two 60-pound cans at 9½c per pound.

Sample, 10c. Truly if you ever ate fine honey you will say this is par excellence.

**THE FRED W. MUTH CO.**

"The Busy Bee-men"

51 Walnut Street

Cincinnati, Ohio

# ...HONEY...

The present season has been a poor one for honey in many sections of the East. We are not dependent upon Eastern markets, however, for, in addition to our Eastern stocks, we have secured several cars of honey from California. Please do not think that, because we have Western honey, it is inferior in quality. On the contrary, we have some of the finest honey ever produced, and a sample shipment will convince you of its quality. We can supply either comb or extracted, water-white or amber. Write to-day for prices and samples.

If you have been so fortunate as to secure more honey this season than you can use, we shall be glad to hear from you. State what kind it is, how it is put up, and lowest price you expect for it delivered in Cincinnati. Do not ship without definite instructions, for we are taking in honey every day and may not have much storage room.

We also have our usual complete line of bee-keepers' supplies. Send in your orders now and get the benefit of the November cash discount, which is five per cent. Our goods are fresh and clean, and the best on the market. Catalog on request.

---

**C. H. W. WEBER & CO.**  
2146-2148 Central Avenue, Cincinnati, Ohio



# GLEANINGS IN BEE CULTURE

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# Extracted Honey Wanted

We are always in the  
market.  
If you have any to sell, mail  
small average sample to

## NATIONAL BISCUIT COMPANY

Purchasing Department,  
Washington Blvd. and Morgan St.  
**CHICAGO, ILLS.**

BOSTON.—We quote fancy white comb honey, 16 to 17; No. 1 ditto, 15 to 16; fancy white extracted, 9 to 10; light amber, 7 to 8; amber, 6 to 7. Beeswax, 32.  
Nov. 10. **BLAKE-LEE CO.**

INDIANAPOLIS.—There is a good demand for best grades of honey, with market fairly well supplied. For fancy white comb honey producers are being paid 16 cents; for No. 1 white, 14; finest extracted in 5-gallon cans, 8. No demand for amber or off grades. Producers of beeswax are receiving 28 to 30 cents.  
Nov. 2. **WALTER S. POWDER.**

NEW YORK.—There are no new features in the market. The demand is good for comb honey, as well as for extracted, and prices rule the same as our former quotations. While most of the comb honey has been sent to market by this time, some lots are still held back by the producers, and there is no sign of shortage as yet.  
Nov. 8. **HILDRETH & SEGELKEN.**

WE WILL BUY AND SELL

# HONEY

of the different grades and kinds

If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for WAX at highest market prices.

**HILDRETH & SEGELKEN**

265-267 Greenwich St., 82-84 Murray St.  
**NEW YORK**

## CHAS. ISRAEL & BROS.

486-490 Canal St., NEW YORK

Wholesale Dealers and Commission Merchants in

Honey, Beeswax, Maple Sugar and Syrup, etc.

Consignments Solicited. Established 1875.

## Cook's Honey-jar!

(Not Dr. Cook who discovered the North Pole)

But J. H. M. Cook, who keeps the Bee-supply House at 70 Cortland St., New York City. Sells the Best and Cheapest Honey-jar with patent air-tight sanitary stopper. Send 10c (half the postage) and you get a sample jar. Catalog free.

CHICAGO.—The trade in honey has been active for the past two weeks, both in comb and extracted. Choice grades of white are sold quickly at 16, with the under grades from 1 to 3 cents less. Extracted white ranges from 7 to 8 according to kind, flavor, and quality. Amber grades from 6 to 7. Beeswax, 30 to 32.  
Nov. 6. **R. A. BURNETT & Co.**

LIVERPOOL.—During the month there has been a fair demand, and some good sales for all descriptions. We think that prices should improve during the winter. Quotations are as follows: Chilean, \$5.28 to \$7.44 per 100 lbs.; Peruvian, \$3.84 to \$4.80; California, \$9.12 to \$9.84; Jamaican, \$6.72 to \$7.20; Haitian, \$6.72 to \$7.20. Beeswax is steady at following quotations: African, \$32.67 to \$33.88; American, \$33.88 to \$37.51; West Indian, \$32.67 to \$33.28; Chilean, \$37.51 to \$40.52.  
Oct. 29. **TAYLOR & Co.**

Honey Markets continued on page 7.

# HONEY!



**DADANT & SONS**  
Hamilton, Ills.

If your white-clover crop is short, and you want some good honey to supply your customers, we can offer you White Alfalfa Honey at the following prices:

One 60-lb. can - 10c per pound  
Two 60-lb. cans or more, 9c "  
Ten 60-lb. cans or more, 8½ "

This honey is put up in new, bright cans, neat and clean, and we can guarantee it in every way. . . . .  
Sample by mail 5 cts. to pay postage.

# GLEANINGS IN BEE CULTURE

Devoted to Bees, Honey, and Home Interests

Established 1873

Circulation 35,000

72 pages Semi-monthly

A. L. BOYDEN, Advertising Manager

## ADVERTISING RATES

Twenty-five cents per agate line, flat. Fourteen lines to inch.

SPACE RATES. To be used in one issue. One-fourth page, \$12.50; one-half page, \$25.00; one page, \$50.00.

Preferred position, inside pages, 30 per cent additional.

Preferred position, inside cover, 50 per cent additional.

Outside cover page, double price.

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Cash-in-advance discount, 5 per cent.

Cash discount if paid in 10 days, 2 per cent.

Bills payable monthly.

No medical or objectionable advertising accepted.

Column width, 2½ inches.

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Columns to page, 2. (Regular magazine page.)

Forms close 10th and 25th.

Address Advertising Department, Gleanings in Bee Culture, Medina, Ohio.

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# Commercial Bee-keeping

may not be exactly the right words to use; but the idea is, "keeping bees to make money." The man who has kept bees several years, who knows thoroughly the A B C of the business, is now interested in learning systems, methods, and short cuts that will enable him to spread out, "keep more bees," and make some money; and no journal is now doing more for this class of bee-keepers than is being done by the—

## Bee-keepers' Review

It is emphatically the specialists' journal. For 15 years its editor made his living in the apiary; he still owns, and helps to manage, several hundred colonies; and he knows the needs of this class of bee-keepers. Instead of using space for "hints to beginners," which are all right in their place, the REVIEW turns its attention to the unsolved problems of advanced bee culture. Some of the best bee-keepers of the country, those who have managed large numbers of colonies, and made money in so doing, tell in the Review how they have succeeded.

The Review is \$1.00 a year but so long as the supply of back numbers holds out I will send this year free to those who send \$1.00 for 1910. You may have been thinking of subscribing with the beginning of the year—do it now, and you will get the back numbers. If you wait until January you probably won't get them.

For ten cents I will send three back numbers of different dates, also a special clubbing offer. The ten cents may apply on a subscription sent in later.

**W. Z. HUTCHINSON, Flint, Mich.**

## The Best Honey-jar

No. 25 with lined cap, \$5.00 per gross.  
Sample, 20c. Catalog of supplies free.

**FINE LIGHT HONEY, 8½¢ per Lb.**

Apiaries:  
Glen Cove, L. I.

**I. J. STRINGHAM,  
105 Park Place, N. Y. CITY**

### Honey Markets continued from page 5.

**ALBANY.**—The honey market is steady, with very little fancy grade of either buckwheat or clover; hence quotations for fancy grades are quite nominal. The bulk of clover honey grading No. 1 sells at 14 to 15, while strictly fancy would sell at 16. Amber, or honey grading between buckwheat and clover or mixed, sells at 13 to 14; buckwheat, 12 to 13; strictly fancy, 14; extracted clover or basswood, 8½; amber or mixed, 7 to 7½. Straight buckwheat sells best at 7 to 7½.

Nov. 8.

H. R. WRIGHT.

**DENVER.**—We quote our local market as follows: No. 1 white comb honey, per case of 24 sections, \$3.20; No. 1 light amber, \$3.05; No. 2, \$2.90; white extracted, 7½ to 8½; light amber, 6½ to 7½. The demand for carload lots of comb honey has been good, and the State is pretty well cleaned up. We pay 24 to 25 cts. per lb. for clean yellow beeswax delivered here.

Oct. 23.

**COLORADO HONEY-PRODUCERS' ASSO'N,  
F. Rauchfuss, Manager.**

**SCHENECTADY.**—There has been no change in our market since our last quotations, except that there is less demand for light extracted, and prices are a trifle lower. We are receiving many letters from California and other far western dealers desiring to sell or consign us both extracted and comb honey; but so long as our eastern crop is ample to supply our trade we can offer them no inducements to do so, and our customers much prefer eastern honey.

Nov. 6.

**CHAS. MACCULLOCH.**

**BUFFALO.**—There is quite a good demand for white comb honey. Prices do not change, and I suppose the market will continue pretty steady until the first of the year. There is a poor demand for No. 2 or under grades, buckwheat selling very well; No. 1 to fancy white comb honey, 15 to 16; No. 2 ditto, 11 to 12; No. 1 buckwheat, comb, 10 to 12; white-clover extracted, 7½ to 8½; amber extracted, 7 to 7½; dark extracted, 6 to 7. Beeswax, 28 to 30.

Nov. 8.

**W. C. TOWNSEND.**

**ZANESVILLE.**—There is a moderate demand for honey, and not much change in prevailing prices, though the tendency now is rather upward than otherwise. For No. 1 to fancy white comb, producers would receive from the jobbing trade 14 to 15½. Best grades of comb go to the retail grocery trade at 16 to 18 in one or two case lots; 8½ delivered is offered producers for best white-clover or raspberry extracted in five-gallon cans, jobbers selling at 1 to 1½ cents advance on this price in small lots. Producers of beeswax are offered 28 cts. cash, or 30 in exchange for bee-supplies.

Nov. 8.

**EDMUND W. PEIRCE.**

**BINGHAM**  
Original  
Direct Draft  
CLEAN  
Bee Smokers

4 Largest Sizes Soot Burning

Pat. Dec. 8, '92, 752 & 1003



Never Go Out  
And last from 5 to 21 years or

Tin 4-in. Smoke Engine \$1.50  
3½-inch 3-inch 2½-inch 2-inch Wonder  
\$1.10 \$1.00 90 cts. 65 cts.

Perhaps our smokers cost us a few cents more to make than they would were we to cut out the valve and brass-lined exhaust and tin shields and conical tips with handle far away from hottest part of the smoker; but 32 years of trial by disinterested beekeepers who have used hundreds of thousands, with the greatest satisfaction, would say NO. Our large valves fill the bellows quick, and the smoke continues to pour out of the chimney instead of being sucked back to fill the bellows with cinders and smoke. We make five sizes of smokers, alike except in size and price. A large smoker furnishes more smoke, and keeps smoking like the smaller ones, till the fuel is all burned up (if not puffed three to six hours). Price by mail, postpaid, Smoke Engine, 4-inch tin, \$1.50; Doctor, 3½-inch, \$1.10; Conqueror, 3-inch, \$1.00; 2½-inch, 90 cts.; Wonder, 2-inch, 65 cts. We make the three larger sizes of heavy copper if ordered, but charge 50 cts. extra. We have moved our smoker factory to Alma, Mich., about 40 miles south of Farwell, where we have fine facilities for shipping and making smokers. **T. F. Bingham, Farwell, Mich.**



# PUBLICATIONS ON BEE CULTURE

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In 1908 I bought two three-frame nuclei of you, and in 1909 three more. I now have twenty good colonies ready for winter, and have taken 871 pounds of extracted honey, and they have drawn their own combs from full sheets of foundation. Hilton's strain of bees and Root's goods can't be beat, and *you* do sell them at factory prices.

G. C. CHASE, Robbins, Wis.

*Friend Hilton:*—I increased the 10 three-frame nuclei I got of you last spring to 21 full colonies and took off 1120 finished sections and 132 unfinished, of fine honey, and had it not been for the early frost would have had much more.

M. D. CAVEN.

Bergland, Upper Peninsula, Mich.

I have sold more queens and nuclei now for spring delivery than I sold last season. Send for 40-page catalog, free, with discounts for early orders on bees, queens, and supplies.

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Liberal discount given on  
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## AS THE ADVERTISING DEPARTMENT SEES IT

### THE OPPORTUNITY FOR BEE-KEEPERS.

WHEN the selling prices of many commodities, especially food products, are noticed it must occur to bee-keepers sometimes that the retail price of honey has hardly kept pace with the advances made in other goods. It will be remembered that years ago such men as W. Z. Hutchinson, James Heddon, and other able writers contended that comb honey could never be a staple product, but always a luxury, and this seems as true to-day as ever. The price realized to-day by bee-keepers of the United States for their white comb honey of No. 1 and fancy grades, averages, we think, about 14 cents in the East, and perhaps 12 in the West, and this, we do not believe, is any more than it was ten years ago. The problem is, how to get a larger net revenue for the crops produced.



### SOME THINGS TO AVOID.

Altogether too frequently we get a report of a loss sustained by a bee-keeper on account of a shipment of honey which he has sent to some party whom he supposed trustworthy, but regarding whom he had no definite information. These reports have reached us so many times that we take this opportunity to caution our readers against sending a shipment of honey to any one without definite information as to his responsibility, or cash with order. The mere fact that the order may come from a dealer in bee-keepers' supplies, or some bee-keeper whose name is familiar to readers of the bee-journals, should not be taken as evidence of his ability to pay for a shipment of honey. We do not believe that there are many, perhaps but few, among this class who would willingly defraud a bee-keeper; but so many unforeseen conditions arise that make payment uncertain we are obliged to give this note of warning. A small dealer in supplies handling goods to the extent of a few hundred dollars during the season may take care of his account with a manufacturer in an entirely satisfactory manner; but when it comes to trusting him for honey, it is a very different affair. He should be required to send cash with order, or give references which can not be questioned.



Another thing to avoid is the old story of marketing honey in a slipshod manner. The need of putting it up in the most attractive appearance, and thereby securing the best price, has been brought on so often that it seems only necessary to allude to it here. It does seem too bad, however, that many bee-keepers will stop just short of securing the best price, and a large part of their well-earned profit by failure in the last part of their work.



### SELLING HONEY AT 25 CENTS PER SECTION.

While a large part of the honey crop of the United States will probably be marketed in the same channels that it now is for many years to come—that is, through retail grocery stores—we believe it will be advantageous for a good



## AS THE ADVERTISING DEPARTMENT SEES IT

many who have the ability and the time at their disposal to market a part or all of their crops direct. Now, this means advertising in some form. This may not be merely newspaper publicity—indeed, there may be no printed advertisements at all. In this connection we submit the attached report from one bee-keeper who has advertised his honey in an entirely different way.



*My dear Mr. Boyden:*—Since I regard you as a sort of father to my bee industry, I wish to submit to you my second report. The first report from original purchase of two hives was 260 lbs. of comb honey; two swarms lost; one (division swarm) saved; sold \$45.00 worth for cash—put three hives in winter quarters in fine shape.

I began the season of 1909 with three hives; took 362 sections of fine honey. I have spent about \$100 since my beginning. The whole outfit is worth over \$200, besides having taken 622 sections of honey, and selling about \$115 worth.

I think I ought to tell you of my means of selling. You will remember I am a musician, and our musical union of New York consists of over 5000 members. At our headquarters one may see about 2000 musicians every day from 12 to 2:30 P.M., where they meet to transact their business, making a regular exchange. All these musicians know I live in the country, and have bees, and you would be surprised to see how they clamor for the honey I carry in to them. All my honey sells for 25 cts. per section, and I sell out just as fast as I can deliver it. I believe that, if I had 2000 lbs., I could retail it all out during the winter. One man took 40 sections, and has placed his order already for 60 next summer. You have no idea how ready and willing those fellows are to get and pay well for any thing coming directly and honestly from the country.

I am much more enthusiastic over my bees now than when I started, and I have no doubt that, with your assistance to educate me along the proper lines, I will, in the course of time, have quite an apiary—at least such is my present ambition.

W. S. WYGRANT.

Nov. 6.



We publish this merely as a suggestion of what may be done if bee-keepers will be on the lookout for many outlets for their honey. In most of the larger cities, and in many smaller towns, local bee-keepers have been very successful in disposing of large quantities direct or through canvassers employed by them. Many others could do well to follow some such plan as that advocated in this paper some months ago by W. Z. Hutchinson. The opportunities for work along this line are unlimited; but the chance for losses must always be kept in mind, and every precaution taken to avoid such. The loss of a single shipment sent to an unreliable party, or occasioned by careless packing, or through some other neglect, may mean the wiping-out of all the profits of the work of an entire season. Having taken pains to produce fancy honey, put it up in a manner worthy of its quality, and find a market that will appreciate and pay for something a little better than the average.

**"If Goods are wanted Quick, Send to Pouder."**

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# A SLANDER REFUTED

**By the Bee Crank**

How doth the little busy bee  
Improve each shining minute!  
From neighbors' fields his stock she steals—  
That's why there's money in it.

A man who could so slander the honest, industrious bee is small enough to skin fleas for their hides and tallow. I will admit that he has emphasized one of the great factors for profit in bee-keeping; but every farmer knows that the bee earns 200 to 300 per cent above what she is paid for in her services as pollen-distributor. She certainly pays for her stock. She also pays her rent at home if given half a chance. Even if your bees are yielding a good profit above expenses, it will pay you to send for my latest catalog, and it will probably suggest something to you in the way of inexpensive arrangements or additions which your bees will appreciate in their honey-factories, and in which you may be sure they will pay for handsomely in increased honey yield. I am offering inducements for early orders by giving liberal discounts, and my catalog is free.

For beeswax I am now paying 28 cts. cash, or 30 cts. in trade. I have a large stock of finest white-clover comb and extracted honey, and I should be glad to quote you wholesale prices.

*Walter S. Pouder:*—The bee-supplies arrived promptly and in fine condition, and I wish to thank you for your square dealing, and will assure you of my future orders.

Lebanon, Ind.

Yours very truly,

DAVID WALTER DODD.

*Walter S. Pouder:*—Please get the above goods off on first train; but when I send to you I am always assured of prompt shipments.

Bagley, Wis.

Yours truly,

WALTER HEMPLE.

*Walter S. Pouder:*—Supplies arrived some days ago, but I have just finished unpacking them; they are certainly fine, and I wish to thank you for your promptness in shipping. I shall want quite a lot of material for next season, but will place my order this fall to avoid the rush.

Battle Creek, Mich.

Very truly,

C. A. MALLERNEE.

*Walter S. Pouder:*—Goods arrived safe and all o. k. I am much pleased with your promptness.

Savannah, Ga.

Truly yours,

EDW. C. MAXWELL.

*Walter S. Pouder:*—If I am not disappointed in bee-keeping my orders will constantly increase, and they will all be sent to *Pouder*, for I have learned where to get prompt and accurate service.

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# GLEANINGS IN BEE CULTURE

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## EDITORIAL

By E. R. ROOT.

### WINTER WORK.

Now would be a good time to melt up crooked or otherwise imperfect combs that will accumulate in a season's work. If one buys up bees he will be almost sure to have a motly lot of such combs that would be poor economy to keep, especially if they have many drone-cells. By the modern methods now in vogue one can extract practically all of the wax; yes, he can go further—he can melt up his old combs, if imperfect or undesirable, sell the wax, and have enough left to pay for his labor and buy foundation. Some may doubt this; but we have figures to prove it.

While this may *look* like a bid to get foundation trade, the facts are that bee diseases of various kinds are spreading over the country at an alarming rate, and it is very evident that many yards will have to be recombed in order to prevent disease from getting a start, or to eradicate it after it once gets a hold.

### MORE EVIDENCE SHOWING THE INDISPENSABLE SERVICE PERFORMED BY THE BEES IN POLLINATING FRUIT-TREES.

In one of the leading fruit-journals of the country, *Better Fruit*, for July, appears a very strong article from the Oregon College Experiment Station, showing the almost indispensable service performed by bees in pollinating fruit-trees. It is shown conclusively that many varieties are sterile to their own pollen; that wind itself is not a very important factor in carrying it from one tree to another; that the bee is practically the *sole agent* in doing this important work.

We hope later to present before our readers the full text of this, as the information, coming as it does from a fruit-journal and an experiment station, whose investigations are from the standpoint of the fruit-grower's interests, will have more weight with the fruit-grower than if it came from the bee-keeping interests. It is safe to say that practically all of our experiment stations and our most progressive fruit-growers have now come to recognize the importance of having bees located in their orchards. If they can not get a bee-keeper to locate his bees near them, they are buying bees themselves and placing them there.

BEE CULTURE TAUGHT IN THE PUBLIC SCHOOLS OF NEW YORK CITY; STIMULATING A CHILD HOW TO SEE, TO THINK, AND TO LOVE SOME OF THE USEFUL THINGS OF THIS WORLD.

We have known for some time that bee culture has been made a department of nature study in some of the public schools of the big metropolis. Colonies of bees have been sold to them, and the same are conveniently located in the buildings or on the grounds, where the children can watch and study them.

We learn from the *New York World* that Miss Emma V. Hagarty, one of the teachers, has been out west studying bees and honey production. She is an enthusiast on the subject, and now is said to be teaching at school No. 190. According to the principal, Miles Goldy, "It is astonishing what the children have been able to get out of the watching and studying of those insects. In all my years of teaching I have known nothing that would so develop a child's powers of observation and ability to relate orally or in writing a mass of true scientific information derived from actual investigation. Almost any child in the school can, at a glance through the glass, tell the old bees from the young ones, picking them out from thousands. *It is worth something to get a herd of boys in such a frame of mind that, under no circumstances, would one of them step on or otherwise intentionally kill or injure a useful insect.*"

The children have drawn very valuable lessons in loyalty to the school, the state, and their homes, from the care and devotion with which the bodyguard looks after the queen of the hive." *Italics are ours.* Then it is related how the children have written "little parables," drawing valuable lessons from the domestic economy of the hive.

Nature study is being made a department in many of our schools all over the land, and our children are being taught to observe and to see some of the pretty things in this great world of ours. "Bees and bee-keeping" is coming to be one of the themes.

While we do not suppose that this department of work is going to make bee-keepers out of our children, we do feel very sure that it is going to stimulate a demand for honey, and to dissipate some of the silly notions now generally current about the so-called manufactured comb honey. A child is pretty apt to tell his parents some of the wonderful things he has learned about bees; and he'll not forget to ask them to buy some honey.



Bee-keepers would do well to encourage and keep our teachers in this work, not alone because it will stimulate a demand for their product, but because it will open up to thousands a new world of thought and love for the useful.

DO BEES MAKE A WINTER NEST? WHY WE SHOULD FEED EARLY.

In our issue for Oct. 1, page 538, we stated that the purpose of early feeding is to give the bees a chance to "invert" the syrup to some extent, and at the same time to make a "winter nest;" that if the bees are fed late, instead of having this nest surrounded by sealed stores, the cluster will be formed upon slabs of honey (probably unsealed) approximately an inch thick, which slabs would divide the cluster up into so many vertical separate and distinct clusters of bees—a condition that is not in accordance with nature.

In his comment on this, the editor of the *Canadian Bee Journal* considers this a rather new doctrine, differing much from the opinion that he had hitherto held. Then he adds, "Does Mr. Root know that this is a matter of fact, or is it only theory?" For our brother editor's benefit we may state that our conclusion was arrived at through a series of observations covering some twenty-five years. We have repeatedly opened up the brood-nests of our outdoor-wintered colonies during different months of the year, more especially during the last days of feeding, and at the approach of cold weather. We have observed, time and again, when bees are fed *early enough*, say the last of September, they will form a winter nest of empty cells, said nest surrounded by sealed stores. If this nest be opened during mid-winter, individual bees will be found crowded down into the bottoms of the cells, the evident purpose of which is to make the cluster of bees one homogeneous mass, separated only by the paper-like midribs of the combs and the cell walls. Place a thin division-board between two clusters of bees, and almost invariably you will find a hemisphere of bees on each side, showing how the two lots of bees seek to get the advantage of mutual heat.

If, on the other hand, bees are fed late, the cluster will be formed, but it will be divided up by a series of vertical slabs of stores, approximately one inch thick. As the winter progresses, the stores will be eaten out and the winter nest will be formed.

No one would deny that bees can winter when placed upon combs filled solid with honey or sugar syrup. We have wintered them that way hundreds of times; but that does not argue that such a condition is ideal. Experience in our case shows that such late-fed bees are handicapped during the fore part of the winter, or until they can form that nest. This consists of a circle of empty cells in each comb, generally toward the front in a Langstroth hive. As the stores are consumed, the cluster works upward, and then gradually backward, always keeping as close as possible to the stores. Dur-

ing the fore part of the winter we shall find this winter nest toward the front of the hive, directly over the entrance. Why this is so, we do not know. During the latter part of the winter we find it toward the back.

Of course, there are many exceptions to all these cases. We are only stating what we have observed here at Medina and at other yards where we have had the privilege of making an examination during mid-winter.

We join with editor Hurley in the statement that "a frank discussion of the matter can do no harm." And then he generously adds, "If Mr. Root is right we shall be glad to find that we are in error." In the same way, if discussion shows that we are wrong, we shall be equally frank to admit it to Mr. Hurley. The matter is of some importance; because if bees do not form this winter nest, or do not need it, rather, then we can feed as late as we like.

On the side of theory it would seem clear that a cluster that is practically a homogeneous mass will winter better than one that is divided up by vertical divisions an inch apart. Besides, honey is a conductor of heat and cold. If the division is made up of sealed honey or sealed syrup these divided clusters necessarily have to keep the honey practically at a temperature of their own bodies. This would necessarily mean a larger consumption of stores in order to keep up body heat. Overfeeding in winter is apt to induce dysentery; and, while it may not kill the colony, it will so weaken it that it is practically good for nothing for the next summer's flow.

Our columns are open for this discussion; and if the editor of *GLEANINGS* is wrong our readers are cordially invited to straighten him out.

LATE FALL FEEDING; FULL DETAILS ON HOW TO DO THE WORK RAPIDLY AND EASILY.

If colonies are to be wintered on sugar syrup mainly, the general practice is to feed some time in September, and, as a rule, this is, perhaps, the best time to feed. Still, in many localities in central United States, there is warm weather in October sufficient to start brood-rearing, and much of the stores fed in September may be consumed so that what is left is not sufficient to last until the new honey-flow. For this reason it is often not safe to feed in September and give no further attention to the bees. There are other cases when, for one reason or another, feeding may be delayed until cold weather begins: for instance, if one is running a number of outyards it is impossible, without hiring a large force of men, to feed all these yards at once, and by the time the last yard is reached it may be pretty late.

For this late fall feeding we know of no better feeder than the Miller. This will hold at least 15 lbs. of feed at a time, and it can be quickly put on and taken off without much disturbance to the brood-nest. On the other hand, if the colonies are not quite as strong as they should be, so that some contraction is necessary in the winter any way, it is

probably just as well, and perhaps even better, to use the Doolittle division-board feeder holding about 6 lbs. of thick feed at a time. During the season, any combs which are found that are too old, or which, for some reason or other, are not perfect, whether due to drone-cells or irregularities, can be gradually pushed to the outside of the brood-frames; then in the fall, when it is time to put in the feeder, provided the division-board feeders are used, these defective combs can be very easily gotten rid of with a very small amount of labor, and with no loss of brood. Furthermore, if the colonies need feeding, these outside combs will not contain much honey. On a cool day an outyard can be looked over very quickly, and the old combs that are on the outside of the brood-nest removed with very little trouble. If a follower is used, the removal of one comb and the follower makes room for the feeder; but if the combs completely fill the hives, two combs must be removed. It is rather bad practice, if sealed covers are used, to break the propolis sealing around the covers of the hives after cold weather has set in; but, as we said before, there are many instances where the feeding must be done late; and there is this advantage—that, when the weather is cold, the feeders may be put in in a very short time, and with but little shaking of bees from the combs that are removed.

#### HOW TO MAKE THE SYRUP.

Elmer Hutchinson, in the October issue of *The Bee-keepers' Review*, rather defends late fall feeding, and describes his method for making the feed. He says that, while he has an oil-stove that he uses for cooking at the outyards, he finds that the water for making the syrup can be much more quickly brought to the boiling-point in a galvanized tub over a good fire out of doors. He sets the tub on four or five stones, fills it with water, and builds the fire underneath. He then pours in the sugar until the water will dissolve no more. Four and a half gallons of water will dissolve 100 lbs. of sugar, making the syrup about the proportion of  $2\frac{1}{4}$  pounds of sugar to one pound of water. The syrup that we have been feeding here this fall has been made of  $2\frac{1}{2}$  lbs. of sugar and one of water.

If the weather is cool enough so that the bees are considerably drawn together toward one part of the hive, it is best to have the syrup quite warm when it is put into the feeder; but if the bees are scattered around pretty much through all the hive, there is no particular advantage in having the syrup warm unless the nights are cold.

Mr. Hutchinson has never found it necessary to use acid in the syrup to prevent hard granulation, and our Mr. Bain corroborates this view. Many others, however, seem to think the use of acid imperative, although some prefer honey instead of acid. We are not certain as to the reason for this difference of opinion, but possibly "locality" or the amount of stirring which the syrup gets has something to do with its granulation. We do not advise stirring more than enough

to get the sugar dissolved in the hot water. If honey were to be used with the syrup to prevent granulation it would be of the utmost importance to be sure that it contained no disease germs. Rather than use honey from an unknown source, we should prefer to use the acid or to run the risk of having the syrup granulate.

The best time of day for putting feed into the feeder is toward the close of the afternoon. It is not advisable to do the work in the morning or early in the day, for the reason that the bees are always excited, and robbing might be started, especially if it were warm enough for the bees to fly. Right here is a point in favor of the cold-weather feeding, for there is no such danger of robbing, of course, when the bees can not fly on account of the cool temperature. With the cans of feed distributed at regular intervals throughout the yard we have found that 100 colonies may be fed in an hour's time providing the work is rapidly done. Every thing must be right, so that no stops need be made for any thing.

We fix the feed at home and carry it to the yards in the regular five-gallon honey-cans, as these are about the largest-sized cans that can be handled conveniently by one person. If two were doing the feeding a larger can might be used.

While the syrup is still hot we load it into the auto, six or eight cans at a time, and carry it rapidly to the yard. When we reach the edge of the apiary, we take the cans, one at a time, and locate them through the yard where the markings on the hives show that we shall need them. If the cans have good strong handles we are able to carry two at a time, one in each hand; but the difficulty is that the handles are liable to tear loose from the can at one end and drag through the hand, cutting the fingers and allowing the heavy can to fall on the feet. For this reason we prefer to carry one can at a time in the arms. If a small rope sling were used, two cans could be carried without danger.

When we are ready to commence feeding we fill a large sprinkling-can, with the rose removed, and then proceed at once to pour the syrup into the division-board feeders in every hive. Each feeder, as mentioned before, will hold about six pounds of thick syrup. By the time we have emptied one of the five-gallon cans we have reached a point in the yard where a new full one is waiting for us, and we can proceed without stopping to run for more cans. On the covers of the hives are marked the number of pounds of syrup which each hive is to receive. It is likely that not all of the hives will need feeding a second time, so the second day the work can be done even more quickly than the first time. When it is not too cool the bees will have taken the syrup in one feeder in 24 hours' time; but if the weather is very cold they will require 48 hours; but this time can be materially reduced if the syrup is given hot. We would always give it hot if it is cold enough so that the cluster is contracted.—H. H. R.



## STRAY STRAWS

BY DR. C. C. MILLER

"THE PRIZE was given by the Ontario Beekeepers' Association. It occupied a space 12x20 ft.," page 658. They give big prizes over there.

TO EXTRACT tender combs, don't uncap the second side till you have extracted most of the honey in the first side.—*Bienen-Vater*, 268. How is that?

I PUT combs with pollen over an excluder, as C. E. Adams says, p. 635, and it was not long till it was all cleaned out. But I don't think any of it was carried down; it was eaten.

I BACK DOWN, Mr. Editor. I tried feeding sugar and water 3 to 1, and it's too hard to dissolve. For late feeding I'd take 2½ to 1, heated, with the acid; but if not too late your 2 to 1, cold stirred, is all right.

REV. BURGHARDT, *Leipz. Bztg.*, 155, speaks approvingly of the American custom of allowing no queen to enter her second winter. Does one American bee-keeper in five follow that custom? Does one in ten?

JOHN MAJOR, p. 592, I think I would have to use excluders if I did not fill my sections with worker foundation. The queen is coax- ed up by the drone-cells in a section not entirely filled with worker foundation.

IF BOILING splints an hour, as Geo. J. Friess suggests, p. 629, will prevent gnawing, it's a big item. [We should be pleased to get further reports from those who have tried boiling the splints for an hour.—ED.]

REPLYING to F. D. Spencer, I don't believe foul brood comes from foundation, but from surrounding diseased colonies or diseased honey. The quickest way to cure is to throw on foundation. I don't know, but I've some question whether bait sections will carry the disease, especially as no honey is left in them. But it might not be safe with American.

I'VE TRIED no little to have a colony empty sections without having bees of other colonies get at them—never succeeded satisfactorily. I tried the Greiner plan, p. 653, only I put the super in front instead of behind the hive. The chief result was a pint of so of dead bees under the super. Friend Greiner, it looks as if your plan ought to work. Thanks.

"I DON'T THINK I've averaged two natural swarms a year that I hived in the orthodox manner." I said that, p. 656, and ye editor doesn't understand. Let me explain. I've more swarms than that, but I don't hive them as separate swarms. The queens being clipped, the swarms return, and then we do something to the old colony. In reality, however, there are very few swarms most years.

BEES ARE CHEAP in Germany. In September *Leipz. Bztg.* I counted 24 advertisements offering 4 or 5 lbs. of bees (no hive or combs), with laying queen, for \$1.00—some less. [Selling bees without combs or brood is be-

ginning to be a new industry in the United States. It has the merit that it probably eliminates all possibility of transmitting foul brood.—ED.]

DOOLITTLE has never known bees to gather basswood pollen. J. L. Byer says, *American Bee Journal*, 298, that this year he had no honey from basswood, but for ten days the trees were swarming with hundreds of bees, all laden with light-yellow pollen. "Bees never do any thing invariably," said Mrs. Ellen S. Tupper. [See Canadian Notes, page 592.—ED.]

MORLEY PETTIT, the Ontario Provincial Apiarist, carries about with him a sample of European foul brood, "nicely cased up in a small well matched frame, with glass on both sides.—*Canadian Bee Journal*, 246. Neat idea, only the learner can not easily enjoy (?) the odor—an important item, especially with the American brand. The European affair seems to be getting quite a foothold in Canada.

I'M THANKFUL to say that a late flow made my hives heavy for winter, and gave me 1000 sections besides. I'd rather have a late flow to fill up than a much larger amount of early surplus. [After the failure of the honey crop during June and July, and the visitation of black brood, this is encouraging. We hope, doctor, that the young clovers are as abundant around Marengo as they are around Medina.—ED.]

YE EDITOR thinks, p. 674; that "as a general thing there will be enough drone-cells scattered around here and there in the brood-nest so that, ordinarily, we would not think the queen would be inclined to go above." My guess would be that, unless the number of drone-cells be unprofitably large, the queen will be nearly as much inclined to go above as if no drone-comb were in the brood-chamber. Sections full of worker foundation offer no temptation for the queen to go above. [You are doubtless right. As you have made this more of a study we humbly defer to your opinion.—ED.]

DELOS WOOD wants me to read the pictures on p. 603. Awhile ago ye editor, in a scrap with me, insisted on holding his smoker as if he were pigeon-toed in his hands. On p. 603 what looks like the same gentleman makes four appearances holding his smoker in the civilized fashion I contended for. Is it a change of heart, or what? [If you will turn again to page 603 you will see that the position of the operator is such that it will be more natural for him to grab the smoker at the side than at the top. In Fig. 9, for example, it would be almost impossible to hold the smoker in any other way, and yet be able to look up under the super. No, when necessity demands that the smoker be handled in some other way than that which we generally pick it up, we use that "other way."—ED.]

DOES YOUNG BROOD make bees destroy virgins? Editor Hutchinson says that in his years of commercial queen-rearing he soon



found that the one great desideratum was unsealed brood at all times in the nuclei. "In all those years," he says, "during which I had thousands of young queens in nuclei containing larvæ, I never saw any indication that the presence of the larvæ had any tendency to cause the bees to injure the queen."

F. GREINER is just right, p. 594, that German bee-keepers know better than we what's right for their conditions. We Americans are apt to think we're IT; but although there are things Germans can learn from us, we can also learn a lot from them. There's no good in so much national prejudice on either side. "We be brethren," and Americanized Germans like F. Greiner are doing a good work in bringing about a better understanding on both sides.

J. G. CREIGHTON, thanks for data, p. 644. Those 13 observations showed an average of 13,692 bees that that plant entertained throughout the day. As the plant occupied 9 square feet, an acre would contain 4840 plants, and these would entertain 66,269 bees. Now, how many bees does a strong colony keep afield throughout the day? How would 22,000 do for a guess? At that rate, an acre of sweet clover ought to keep three colonies busy.

THAT HIVE-TOOL, p. 632, is good. I'd like it better with the square end rounding. [While a tool with a *rounding* blade is a little nicer for prying the hive-bodies apart, it is practically useless for scraping wax or propolis off from bottom-boards, frames, or hive-sides. A tool with square edges is just as handy for prying the hive-bodies apart, and has the additional advantage that it may be used as a scraper. A hive-tool that could not be used as a pry and a scraper at the same time would be, to our notion, only half a tool.]

We submitted a good many different models, among them some having round ends; but these were thrown out by practically all of those to whom tools were sent for suggestions and criticisms. Give a square-edged tool a good careful test for a season; and if you do not admit that it is "oceans ahead" of a round-ended tool, the editor will bind himself by an iron-clad contract to buy you a silk hat. He is sending you by separate mail a square ended hive-tool, and requests you to use it for a year.—ED.]

J. A. YEOMAN'S beehouses on four blocks, p. 638, don't swarm. Other extracting men whose bees need severer measures will do well, in addition, to leave ventilation between each two stories by shoving them backward and forward. I never had a colony swarm when thus treated. [This is a rather interesting question, and an important one also, and we should be glad to get reports from our subscribers generally, as to how far raising hives up on four blocks will arrest or check swarming. Then we should like to know how many have tried the additional ventilation suggested by Dr. Miller, of shoving the stories back and forward. During our winter months this would be a profitable

subject for discussion, for "in the multitude of counselors there is wisdom."

E. M. GIBSON, I'd rather have a plain bottom-bar with the foundation waxed to it than a split bottom-bar without the waxing, because I think the bees are less likely to gnaw the waxing than the foundation without the waxing, and the split bottom-bar squeezes the foundation, making it thinner at the bottom, and so more easily gnawed. But I'd rather have the split bottom-bar *and* the waxing, for it's easier to have an exact fit with the split bar. My foundation, fastened at top and bottom, neither buckles nor breaks apart, as you mention. I generally fasten it in at a temperature of 80 degrees or so—p. 628.

I'VE TRIED to some extent that hive-cover seat as in Fig. 6, p. 634, and I find it a tax on some of the muscles which are constantly kept tense to keep the cover from tipping one way or the other; so for an all-day job I want something more stable. [We do not see why there should be any special tax on the muscles. One can, if he chooses, lean one knee up against the hive. Is it not true that nine-tenths of the milking-stools are one-legged? Do we ever hear of dairymen complaining that such stools put a "tax on some of the muscles"? A hive-cover has to be balanced only one way, while the one-legged stool must be balanced in all directions.]

For all-day work we prefer a variety of positions—part of the time standing on the knees, sometimes sitting on the cover the narrow way, and sometimes on the long way, and, still again, standing up full height and bending over when it is necessary to secure a comb.—ED.]

ISAAC F. TILLINGHAST thus quotes approvingly the views of Mr. Alexander, *Bee-keepers' Review*, 297: "He believes, that when the temperature and conditions of the atmosphere are favorable, nectar is constantly being secreted in the flowers, and is as constantly being evaporated and lost, so that a bee will secure just as much at each visit, at intervals of a few minutes only, as it will at each visit after longer intervals of perhaps several hours." I think this opinion obtains somewhat generally. The error in it consists in assuming that *sugar* evaporates. We know that bees evaporate nectar and produce honey. They evaporate the water, and the sweet remains. If thin honey be evaporated by artificial means, it's the same way. The water alone is evaporated and the sweet condensed. Now if nectar is evaporated in the flowers, have we any right to believe that the result will be different? That the secretion of nectar is constant is, no doubt, true; at least the visits of the bee make the secretion neither more nor less. Suppose a flower is visited once every ten minutes, and all the nectar thus gathered. Suppose it be visited once an hour. If the sweet does not evaporate, and it is cleaned up once an hour, will there not be just as much honey secured as by the ten-minute visits, always supposing that the sugar still remains in solution?

## BEE-KEEPING IN THE SOUTHWEST

BY LOUIS SCHOLL, NEW BRAUNFELS, TEX.

### BISULPHIDE OF CARBON VS. SULPHUR FOR FUMIGATING.

Bisulphide of carbon is ahead of the old-fashioned sulphur fumes for wormy combs. It is much handier, quicker, and surer. I used to destroy ant-hills with it when a boy, and it always did the work. I have special reference to the large ants so often found in our apiaries, the stinging of which is much worse than that of a bee. To destroy the ants I take a crowbar and make a hole in the mound, right in the center, about two feet or more deep, pour into it a teacupful of the bisulphide, and close up the hole by tamping earth into it firmly. The fumes, being heavier than air, penetrate through every possible opening and destroy every living thing. Many set fire to the bisulphide, but this is a mistake.

For wax-worms in combs, Mr. Louis Biediger has a unique way of using the bisulphide without having to putty or close up the cracks in his hives. The two illustrations, page 706, show his method. He first digs a small trench in the ground, into which he places a large newspaper and then piles his stack of hives on this. In the top hive-body he puts a saucer of the carbon bisulphide and covers this up with a newspaper. Then over the whole stack he throws a heavy cloth and pours water over it until it is thoroughly wet, the water also running down into the trench below. Lastly he covers the stack with a large wagon cover or sheet, and then leaves it for some time.

Care must always be exercised in the use of bisulphide of carbon, as it is highly inflammable, and should, therefore, be kept away from fire. Mr. Biediger's method allows the work to be done outdoors and away from buildings, so that the danger is not as great. The work of preparing the hives does not endanger the bee-keeper's life, as it is easily and rapidly done.

[Many are under the impression that fumes of carbon bisulphide are dangerous for human beings to breathe, if even for only an instant. For several days we worked over a large metal tank in which we were fumigating comb honey, without experiencing any bad results. We were careful, however, not to breathe the gas unnecessarily.]

Some have attempted to fumigate combs by putting them in a tight room, but we have found that it is very difficult to get an ordinary room tight enough to do good work. Furthermore, a larger amount of the liquid is necessary than if a tight box were used, but little larger than the articles being fumigated, or some such arrangement as the wet cloth described above. Whatever plan is used, it is necessary to exclude all air so that the gas may be strong enough to be effective.—ED.]

### THE APIARIAN EXHIBIT AT THE TEXAS STATE FAIR.

In spite of the short crop in Texas, the bee and honey department of the State Fair was a grand success. It was better and larger than at any previous fair, although the bee-keepers in all parts of our State had long before disposed of their crops. This made it a very difficult matter to work up an exhibit. The fair management was highly pleased with the good showing made. The bee-keepers are greatly indebted to Secretary Sydney Smith, of the Fair Association, for his great interest in the bee and honey department, and for his many efforts and kindly help. Of course, it should be understood that the superintendent in charge of the department had much to do with making it a success also; but the help given aided the superintendent in his work. This department of the fair is a comparatively new one, and is growing rapidly, so that another year will make it better than ever.

It is up to the bee-keepers of the great Lone Star State to make this annual bee and honey show the best in the South, at least. Too little interest is taken by the bee-keepers of Texas, as a rule.

The following awards were made, Dr. N. King, of Overton, Texas, again judging the exhibits, as he has done for several years. His careful, conscientious work has been appreciated by all who know him.

Golden Italian bees and queens in single-comb observatory hives—1. Louis Biediger, Atascosa, \$5.00; 2. Brazos Valley Apiary Co., College Station, Texas, \$3.00.

Three-banded Italian bees and queen in single-comb observatory hive—1. The Louis H. Scholl Apiaries, \$5.00; 2. W. Atchley, Beeville, Texas, \$3.00.

Carrollian bees and queens in single-comb observatory hives—1. Brazos Valley Apiary Co., \$5.00; 2. The Louis H. Scholl Apiaries, \$3.00.

Cyprian bees and queens in single-comb observatory hives—1. The Louis H. Scholl Apiaries, \$5.00; 2. Smith & Scholl, Wellborn, Texas, \$3.00.

Holy Land bees and queens in single-comb observatory hives—1. The Louis H. Scholl Apiaries, \$5.00; 2. Brazos Valley Apiary Co., \$3.00.

Black bees and queens in single-comb observatory hives—1. B. M. Caraway, Decatur, Texas, \$5.00; 2. Louis Biediger, Atascosa, Texas, \$3.00.

Best and largest display of bees of various races in observatory hives—1. The Louis H. Scholl Apiaries, \$10.00; 2. Brazos Valley Apiary Co., \$6.00.

Best case of wire section comb honey, 12 pounds or more—1. W. W. Lowrance, Centerville, Texas, 5.00.

Best display of special designs in comb honey—1. W. Wiede, Maxwell, Texas; 2. The Louis H. Scholl Apiaries.

Best 12-lb. friction-top pails of white bulk comb honey—1. The Louis H. Scholl Apiaries; 2. W. M. Jones, Tehuacana, Tex.

Best 6-lb. friction-top pails of white bulk comb honey—1. The Louis H. Scholl Apiaries, \$3.00; 2. W. M. Jones, \$2.00.

Best 3 lbs. friction-top pails of white bulk comb honey—1. The Louis H. Scholl Apiaries, \$3.00; 2. The Brazos Valley Apiary Co., \$2.00.

Best display of bulk comb honey—1. The Louis H. Scholl Apiaries, \$10.00; 2. Smith & Scholl, \$6.00.

Best dozen jars of white extracted honey—1. W. M. Jones, \$3.00; 2. Wm. Wiede, \$2.00.

Best dozen jars light amber extracted honey—1. J. E. McClellan, Santa Ana, Texas, \$3.00; 2. Smith & Scholl, \$2.00.

Best display of extracted honey in granulated form—1. The Louis H. Scholl Apiaries, \$5.00; 2. Smith & Scholl, \$3.00.

Best and largest display of extracted honey—1. The Louis H. Scholl Apiaries, \$10.00; 2. Smith & Scholl, \$6.00.

Best sample cake of bright yellow beeswax, not less than 2 lbs.—J. E. McClellan, \$5.00; The Louis H. Scholl Apiaries, \$3.00.

Best display in special designs in beeswax—1. The Louis H. Scholl Apiaries, \$5.00; 2. Smith & Scholl, \$3.00.

Best and largest display of beeswax—1. The Louis H. Scholl Apiaries, \$3.00; 2. Smith & Scholl, \$5.00.

Best display of fruit preserved in honey—1. The Louis H. Scholl Apiaries, \$5.00.

Best honey vinegar with recipe—1. The Louis H. Scholl Apiaries, \$3.00; 2. Smith & Scholl, \$2.00.

Best collection of Texas honey-yielding plants, pressed and mounted. The Louis H. Scholl Apiaries, \$5.00; 2. Miss Metta Hillig, Alvin, Texas, \$3.00.

Best instructive display in apiarian products, and of the various uses made of honey and beeswax—1. The Louis H. Scholl Apiaries, \$20.00; 2. Smith & Scholl, \$10.00.

Best and largest display of bee-keepers' supplies—The A. I. Root Co., Medina, Ohio—diploma.



## SIFTINGS.

By J. E. CRANE, MIDDLEBURY, VT.

Mr. Doolittle's advice, page 493, August 15, on the subject of tiering up supers to get the least number of unfinished sections, is sound, and valuable from start to finish, and well worth following.

The fact that there was a difference of two days in the time of the hatching of queens from cells sealed the same day, as reported by John Silver, in the *Irish Bee Journal*, and referred to by Dr. Miller, page 454, August 1, accounts for the delayed hatching of queens that has often puzzled me. Why should some hatch sooner than others?

On page 495, August 15, Mr. Wm. M. Whitney says he has yet to see a strong colony, however strong it may be, having excessive storage room and proper ventilation during the nectar flow, sulking. Well, I have; and after shaking the bees and taking away their brood they went to work after a day or two with a will. Yes, sir, shaking is a good thing. I believe in shaking. A gentleman who had been a school superintendent was telling me some time ago of visiting a school taught by a vigorous young woman who had one very dull pupil. After spending some time explaining some simple mathematical problem to the boy she asked him if he could see through it; and when he said he could not, she took him by his coat-collar and gave him a good shaking. She inquired whether he could see through the problem any better then, and he said he thought he could, a little. Then she gave him a more vigorous shaking than before, and he said he thought he could see through it some better. She shook him the third time with a vengeance, and then he was sure that he saw through it all right. Surely there is virtue in shaking.

On page 496, August 15, an account is given of Mr. Rood's success in keeping honey in a liquid condition in a solar wax-extractor, and I notice that the editor seems to think that the direct rays of the sunlight prevent granulation to some extent. My experience has been just the opposite. I have used a bleaching-room for several years, and have become convinced that combs exposed to the sun for two weeks or so are much more apt to granulate than those not so exposed. A glass jar filled with honey was left on a shelf in my bleaching-room, and after a time the side next to the glass, which was the side most exposed to the sun's rays, was granulated nearly solid, while that on the other side of the jar had not yet begun to granulate. I had another jar of honey, which, so far as I know, was left out of a lot which was packed in a case and nailed up. The honey in the case remained with but very little change

for nearly two years, while that out in the light became solid in a comparatively short time, or in less than half the time that was required for the jars in the case to granulate.

Mr. Editor, I believe you have struck a good "lead," as the miners say, on page 504, on the question of a large amount of ventilation to prevent swarming. The plan certainly looks as though it were worth following by those who have hives that can be given a large amount of air when most needed. On page 626, Oct. 15, I mentioned Mr. Latham's success in preventing swarming. The entrances of his hives are very large, nearly or quite two inches high, and he leaves them open the whole year, except for a short time during the early spring. I believe the main virtue of Mr. Aspinwall's hive was the large amount of air that could be given the bees during the warmest part of the season. Would it not be strange, if, after all these years, in our search for a non-swarming hive, it should be found that all that the bees need to keep them from swarming is plenty of air, shade, room, and good queens? If this reduces swarming three-fourths or even seven-eighths, it looks as though the problem were nearly solved.

On page 472, E. D. Townsend gives some instructions to beginners on the subject of getting straight worker combs from starters. Mr. Townsend says, "For instance, a new medium-sized swarm placed in a hive of a size that may be filled with combs of brood in about 23 days or less, ought to build worker comb mainly, although some of the last combs built may contain a few drone-cells. The secret seems to be in having just the right number of workers and just the right amount of honey coming in, so that the bees will draw out the combs no faster than the queen can occupy them with brood." He also says that there should be a honey-flow of three or four pounds a day. Now, I have been wondering how a beginner is to tell a medium-sized swarm from one above or a little below medium size; and how is he to tell just the size of hive that may be filled in 23 days or less? I think it would puzzle some of the older ones to tell that. And then how can one without experience tell what is just the right number of workers, and whether the right amount of honey is coming in, or whether there is just three or four pounds of honey or nectar coming in each day. Would it not be better to say that colonies having young queens build much less drone comb than those with older queens, and that such should be used for this purpose so far as possible? It might be well, also, to state that a small colony will build less drone comb, as a rule, than a large one, and that less drone comb is built when honey comes in slowly than when it comes in with a rush. When the beginner has had experience the directions given by Mr. Townsend are all right.



## CONVERSATIONS WITH DOOLITTLE

AT BORODINO, NEW YORK.

### THE AMOUNT OF SURPLUS HONEY WHICH ONE BEE CAN PRODUCE.

Mr. Doolittle, Mr. Barker and I were talking, a week or so ago, about the amount of honey a single bee could gather, and he claimed that one bee might gather a pound. Do you believe this?

If a single bee could gather a pound of honey in its lifetime, many of the problems that confront bee-keepers in the early spring would be solved, for the reason that the apiarist usually desires a large number of bees in the spring, because each individual bee collects so small a part of the accumulated whole during the surplus-flow. But in most localities flowers which yield nectar do not usually last through the life of an individual bee, while many bees, perhaps more than half, that may be reared by the most skillful management, never add any thing to the surplus stores.

If every bee reared could have a field of nectar placed before it in which to labor, then it would be right to keep the colonies always strong; but inasmuch as this can not be, and since the bees at all times must be consumers, whether they are producing or not, there are times when there is no object in having a colony strong in bees, when, because of necessity, they must be consumers only.

A part of the bees must become consumers instead of producers; and another factor comes in here, which is the *supply of nectar*. In reality we must consider the source of supply first; for without it we should not have any use for the bees whatever. With a continuous uninterrupted honey-flow within four miles of the hive in every direction during the time of the bee's flight, when it may work in the field, I think that a bee could easily gather one ounce of nectar, since this would mean that there would have to be only 1600 bees to gather 100 pounds. Of this amount it would take at least 25 pounds to supply the wants of the colony during the time when the bees were living; and unless the nectar were thicker than it is here, it would take 3 pounds of it to make one of honey. This would leave only 25 pounds of honey, then, as the product of the 1600 bees that had access through their life to the uninterrupted flow. However, a good nectar flow during the whole natural life of the single bee is something that is rarely found.

Some years ago I had a colony during apple bloom which I estimated to contain 4000 bees. I counted all the bees on a given surface of the comb, and divided the amount of comb in the hive equally well covered with bees by the area of the space counted, and multiplied the quotient by the number of bees on this surface counted. The next day was a fine one, and apple-trees were yielding as well as I ever knew them to. At 7 o'clock in the morning the bees began to

work; and at 8 I found that 60 loaded bees were going into the hive each minute on the average. By estimating the gain, and calculating with a dropper, I found that it would take about 3600 such loads to make one pound, so I concluded that 4000 bees were good for gathering one pound of nectar each hour, besides caring for the interior of the hive. I weighed the hive before a bee had left in the morning so that I could tell the gain in nectar when night came. The bees worked right along at the average of 60 per minute until 4 o'clock in the afternoon, when they began to slacken up, and at 5 o'clock all had ceased working, as the sky became cloudy shortly after 4 o'clock.

At 6 o'clock I weighed the hive again, thinking to myself as I did so, that, if I had estimated correctly, it should weigh about 8 pounds more than it did in the morning. I found that the actual gain in weight was 8 pounds 9 ounces. I was greatly surprised the next morning, however, to find that the 8 pounds 9 ounces had diminished to but little more than 3 pounds, thus showing that the nectar gathered and somewhat evaporated during the day was far from the consistency of honey capped over in the cells. From this I became infatuated with the idea that much honey could be secured from this source if I had 40,000 bees in the hive instead of 4000, so I began trying to get my colonies as strong as possible in the early spring. After unfavorable weather for the next five years, so that the bees got scarcely a living during the apple bloom, I gave up the plan, trying only to have the colonies strong for clover and basswood.

The great point of all this is that we first have the field or location, of which we should have a thorough knowledge. Next we have the colonies to get strong just in time to take advantage of the main nectar-flow from the field, whether the source be fruit-bloom, clover, basswood, buckwheat, or fall flowers. Third, a bee is of little value as a honey-gatherer unless it can be placed in the field in time for one of these flows.

### BEES FLYING FROM HIVES IN A CELLAR.

I believe that many healthy bees are lost at the time when they carry out dead bees. When a bee brings out a dead bee, it generally falls off the bottom-board with the dead one, and, of course, is lost. Many dead bees are four or five feet away from the hives, and this is what makes me think they were alive when they left the hive.

Nerstrand, Minn.

J. BECKLEY.

[To the above, Mr. Doolittle replies:]

As a rule, bees leave the hive to die when the temperature is high enough for them to fly, and for this reason the larger share of the bees which die while they are being wintered in the cellar go out on the cellar bottom to do so; therefore we have many dead bees on the cellar bottom and few in the hive, where good wintering, with the proper temperature, exists.

Again, I have observed, hundreds of times, bees dragging out their dead when colonies were outdoors, or when wintering on their summer stands; and, although I have often watched for this state of affairs in the cellar, yet I have never seen a *single* bee lugging about a dead companion; and all my observations lead me to believe that the dead bees are never removed by the live bees while the colony is wintering in the cellar.

# GENERAL CORRESPONDENCE

## HIVES.

### Size, Shape, and Methods of Manipulation the All-important Factors in Choosing a Hive.

BY J. E. HAND.

*Continued from page 660.*

In fitting the hive to the man we must bear in mind that the bee-keepers of this country are divided into three classes. The first class is composed of specialists who produce extracted honey on a large scale. They are wide awake, up-to-date business men having a natural love for the occupation aside from the almighty dollar, and who for the most part winter their bees in cellars. They need a hive of sufficient size to accommodate a colony of bees, and sufficient stores to carry them through the winter. An eight-frame hive will afford room for 25 pounds of stores, and still have empty combs enough to accommodate the winter cluster. Twenty pounds of honey will carry a colony of bees from Oct. 1 till June 1, if wintered in a cellar; hence we shall have 5 pounds left at the beginning of the honey-flow, besides what the bees have gathered from fruit-bloom, tulip, locust, willow, and maple; therefore we shall have from 5 to 15 pounds of honey in the brood-chamber at the beginning of the honey-flow.

However, the bee-keeper should visit his bees about May 10, and equalize his colonies by uniting weak colonies with those that are stronger, and place upon each hive a super of half-depth brood-combs. This is important. The bees will begin at once to remove the honey from the brood-chamber and store it in the super, and the queen will fill the empty combs in the brood-chamber with brood from side to side and from top to bottom. This moving of the honey creates an activity within and without the hive which can be approached only by a natural honey-flow, and it stimulates the bees to greater activity.

We now have a hive equal in capacity to 13 L. frames, and in the best shape possible for rapid breeding up early in the season. When the first white clover begins to appear, extract the honey from these supers; place an excluding honey-board on the brood-chamber, placing the super from which you extracted the honey upon the honey-board, and another half-depth super on that. At the next visit, which should be in about ten days, raise up the whole hive, placing a super of empty combs under it. If the honey-flow is a good one it will be necessary to put on another shallow super of empty combs; next to the brood-chamber we have our early-gathered and our old honey separated from our white honey, which will be A No. 1. We have no swarms; our hives being deep, the

honey will be better ripened. The hives will be light to carry into the cellar, and will occupy less cellar room; therefore the eight-frame hive fits class A.

The second class includes all producers of comb honey as well as those who keep bees for profit in connection with some other business. This class represents by far the greater number of the bee-keepers of the country. To such the possibilities along the line of simplifying methods by compelling the bees through their unerring instincts to do the things that heretofore have been performed by the slow and tedious methods of frame-handling offers great inducements, and especially appeals to those whose time is too much occupied to admit of frame manipulation. By the rapid manipulation by hives for which the sectional hive is especially constructed, they will be enabled to keep twice as many bees with a given amount of labor, and at the same time have better control of their bees at all times. We have, therefore, fitted the second class with a hive that is suited to their needs.

The third class includes those specialists who are keeping bees solely for the almighty dollar, and who care little and know less about the instincts of bees. They have eyes, yet they see none of the beauties of nature as revealed by a study of the habits of bees. They are rightly named "honey-slingers," for about all they ever do with their bees is to extract the honey. These are the ones who are calling loudest for a hive that will stand lots of neglect. Since this is one of the strong points of the twelve-frame Langstroth hive we have fitted the third class with the hive.

I regret to say that I am unable, from my point of view, to conceive of a class of bee-keepers whose best interests are served by the use of the ten-frame L. hive, since it is not constructed with a view to the natural requirements of bees.

In order to control our bees by scientific labor-saving methods, the fertility of the queen must be in excess of the room in the brood-chamber proper; therefore, bees can not be controlled with any degree of certainty in ten-frame hives. The word "control" has a broader meaning than the mere prevention of swarming. It includes the control of bees with respect to where the honey shall be stored.

Some seem to think that no one but an expert should attempt to use the sectional hive. but such is not the case. Without a correct knowledge of the instincts of bees it is impossible for any one to secure best results from his bees, and this all that is required in order to manipulate the sectional hive intelligently. While it is an easy matter to compel bees through their instincts to remove every pound of honey from an eight-frame brood-chamber by simply placing a half-depth super of empty combs above it, allowing the queen to have access to both divisions, yet perfect swarm control is not to be attained with a frame as deep as the L. frame without manipulating the frames at least twice



during the swarming season to remove the queen and cut out cells.

I would not, however, advise any one to throw away eight-frame L. hives for sectional hives. The size and shape of the eight-frame hive makes it well adapted for use as a sectional hive by adding a half-depth super of empty combs as soon in the spring as more room is needed. When eight-frame hives are used in this way the top-bars to brood-frames should be  $\frac{1}{2} \times \frac{1}{4}$  inch. The shallow extracting-frames and supers are well suited for use in connection with the eight-frame L. hive as above described, and should always be used in connection with eight-frame hives in the production of either comb or extracted honey. This makes the eight-frame hive a close second to the sectional hive, and places it head and shoulders above all others as a general-purpose hive for both comb and extracted honey for any and every location. The word "location" is being greatly over-worked, and should be permitted to rest.

Birmingham, Ohio.

[There are some who will take issue with our correspondent when he says there is no class to whom the ten-frame Langstroth is suited. Last summer our south yard, consisting mainly of eight-frame hives and a few ten-frames, was run for extracted honey in connection with half-depth extracting-supers. The yard is handled with a minimum of labor. One of our men will visit it perhaps a dozen or a dozen and a half times a year, spending perhaps half a day at a time. As in previous years, so this year, the ten-frame colonies not only produced more honey, but at the close of the season they had relatively more bees and stores than the eight-frame. The larger hives winter better, are stronger in the spring, and stronger all the season; and, what is of much importance, require less attention.]

As between the eight and ten frame hives in the production of *comb* honey, we are not sure but that the smaller hive may be the better; but the larger or ten-frame hive run for extracting for the farmer and the professional man who has not much time to spend with his bees, is, in our opinion, better than the eight-frame.—Ed.]

### JUDGING HONEY.

**Testing the Body and Flavor of Extracted; Record-keeping; Difference in Wax from Different Solar Wax-extractors; Best Frames and Hives for Mating Queens.**

BY F. GREINER.

To test the body of extracted honey, it is said that, the quicker the air-bubble rises in a bottle of honey, the poorer the body; the slower, the better or thicker is the honey. This is true; but it must not be lost sight of that the *size* of the bubble has just as much to do with it. The larger the air-bubble, the quicker it will rise in the same medium; consequently, in comparing exhibits it is neces-

sary to select bottles having the same size of space left above the honey and below the cork.

When testing the flavor we have no guide at all. It is left to the individual taste of the one judging, and tastes differ.

About the color of honey there is much uncertainty. So many points are given to color. What does this mean? We do not know what the color of clover honey should be. It is the same with linden. Buckwheat honey is an exception. Generally speaking, the lightest-colored honey takes the prize. Is that right and just?

### A SWISS SYSTEM FOR REGISTERING QUEENS.

As has been stated by Dr. Miller, the Swiss have proposed a herd-book in which bee-keepers may register their stocks of bees. Rules and regulations to keep this register properly have been formulated by them. How successfully such a record may be kept is to be found out. Every bee-keeper, however, may keep a herd-book of his own, which may be a very profitable affair for him, and possibly for others. My records have been kept on the honey-boards, and can not be detached. Some of those honey-boards have been planed off to make room for more records, and thus that part of the record has become lost, since it has not been transferred to any book or something else.

It may be a great advantage to be able to trace back the blood of a colony. I would give a good deal to-day to know whether one certain colony in my yard, which has a record of 130 lbs. of section honey in 1907, 120 lbs. in 1908, and 48 lbs. in 1909, the poorest honey season in many years, has the blood of Root stock, of Moore, or something else. Perhaps a good way is to write the records upon broken sections, and at the end of the season bring these home and file or transfer the records to a book. I notice many of my records on the honey-boards become so dim in time that they can not be read any more.

### HIVE-NUMBERS.

If a record is kept in this way, so that we may, when we are at leisure, look it over and find and classify our most profitable stocks, the numbering of the hives is an absolute necessity. Bee-keepers in Germany have named their swarms after noted men like Berlepsch, Dzierzon, Kaiser Wilhelm, Baron Bismarck, etc. When owning hives by the hundreds, numbers are better than long names. Recently samples of numbers have been sent me by a firm in Germany. They are of aluminum, of silvery color. Such do not show well at a distance. I should prefer a jet-black color, and have the number, be there a single figure like 1, 2, 3, etc., or two like 12, 13, 14, 25, 99, etc., *on one piece of metal*, not each number cut out separately, making it necessary in most cases to fasten two or more numbers to one hive to get the combined number. It seems to me there would be a demand for these numbers if they could be made cheap enough.

Numbers which I have stenciled on hives, also on pieces of zinc, have become illegible, and I should like something more reliable.



#### DIFFERENT COLOR OF WAX FROM DIFFERENT SOLAR EXTRACTORS.

We have two solar wax-extractors in our yard, and use them to obtain the wax from the cappings. The wax from the small Doolittle extractor is a fine yellow; from the large Boardman it is dark. The bottom of the first-named extractor seems to be made of steel; that of the other, of iron. If the iron discolours the wax to such an extent it would be advisable to use steel in the making of the Boardman extractor as well.

#### FULL-SIZED SHALLOW HIVES PREFERRED FOR MATING-BOXES.

For the rearing and mating of queens I tried, in the years gone by, the baby nucleus, other small-framed hives, some  $5 \times 6$  inches,  $5 \times 8$  inches, half-story,  $5\frac{1}{2} \times 17\frac{1}{4}$  framed hives, and also full frames  $11 \times 17\frac{1}{4}$ , two or three in a regular hive. I have been successful with all of them, and still I am abandoning the small frames more and more, particularly since taking into use the sectional hive. This latter is not only well adapted as a mating-hive, but also as a means of safe introducing. During the most favorable season for queen-rearing we have many of these small hive-bodies full of brood to dispose of. It is a very easy matter to establish them as mating-hives. When the young queens are laying well I unite one of the little colonies by placing it on top of or under the brood-chamber of a colony which needs a better mother. Of course, the old queen must first be removed. Sometimes I use a sheet of paper between the two colonies.

Before taking small frames into use for the purpose named above I was under the impression that the smallness of the frame would be an advantage when hunting queens, but found just the opposite to be true. The large frame does not offer the queen as good an opportunity to dodge around the combs or run off. Young queens are always more apt to do this than old ones. I can hardly take a small frame out of the hive quick enough to prevent the queen from running off. Often I have had my eye right on her while operating, and had occasion to observe it. In hunting out queens from sectional hives, as Mr. Hand has explained, the frames do not have to be handled singly. This feature is a most valuable one of this style of hive.

Naples, N. Y., Aug. 23.

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#### IMPROVEMENT IN BEES.

**What the Swiss have Done Toward the Control of Swarming; the Difficulty in Obtaining Isolated Mating-stations in the United States.**

BY DR. C. C. MILLER.

"All the world's queer but you and me, Sandy, and sometimes I think you're a little queer, Sandy." We are apt to think our own notions are all right, and anyone who thinks differently is more or less "queer," not always taking into account differences in cir-

cumstances and conditions. American bee-keepers have settled that Italians are superior to blacks, and look upon their Swiss brethren as a little slow when they cling to the blacks. My good friends, don't you fool yourselves about those Swiss bee-keepers. If there's a bunch of intelligent, progressive bee-keepers anywhere in the world, you may find it in Switzerland.

On the other hand, it may be a little difficult for Swiss bee-keepers to believe that Italians are better for us. The story is soon told. When the American bee-keeper finds that, by introducing Italian blood, he increases his crops, not occasionally but always, as compared with the crops he got from blacks, is it any wonder that he should prefer Italians? No use to discuss characteristics and qualities; the one matter of bigger crops overbalances every thing else. No use to say natives ought to fit best; blacks are no more natives than Italians; both come across the sea. It should be noted, too, that there is a greater unanimity here in favor of Italians than there is elsewhere in favor of blacks. In England, in Switzerland, in Germany, there are still some who prefer Italians. In this country it would be difficult to find any who have such belief in the superiority of the blacks that they cultivate pure black stock in preference to Italians. The fact that some may prefer hybrids is hardly to the point. The Italian blood is the best part of the hybrid, and must be resorted to for profitable continuance.

Having said this much in favor of Italians in this country, it may be well to refer to matters in Switzerland, partly because of the sidelight it may throw on American affairs. Some things that have been said in GLEANINGS have moved Dr. K. Bruennich, of Ottenbach, Switzerland, to write me an interesting letter that I am glad to share with the readers of GLEANINGS.

My good friend, C. P. Dadant, has said that it would take a very long time to produce appreciable results in changing the characteristics of bees. My own experience does not lead me to agree too fully with him, but certainly the Swiss have not been at work long enough to produce any very marvelous changes, for Dr. Bruennich says it is only about ten years since they began work with a continuously definite aim, consistently working toward that aim. In this country frantic efforts have been made toward controlling fertilization with big tents or otherwise, and bee-keepers have sighed for a place where young queens could be fertilized without danger of meeting the wrong kind of drones. Swiss bee-keepers didn't sigh; they just went to work and established mating-stations where a virgin could be sent by post, and returned to her owner after being mated with the only strain of drones that could be met at that station. Talk about Yankee enterprise! Why hasn't something of that kind been done here?

But what could be done in ten years? Take the swarming impulse. How much could be done at breeding it out in ten years? Well,

Dr. Bruennich says they didn't have to breed up a strain of bees practically non-swarming. They had the material ready to hand, to be had for the seeking.

"The race was existing already," says Dr. Bruennich, "but only in very remote farms, where no foreign blood (Carniolan or Italian) had spoiled the good qualities of the old acclimated bee. We had nothing to do but to seek those isolated colonies, and to take the best of them for rational breeding. The best stock I possess myself: Sigrun, Made, and Berna" (in Switzerland their blooded queens are named as well as their blooded cattle), "are from such colonies. The first comes from an exceedingly remote bee-yard of about 12 colonies, which has existed there for many years, with almost no swarming, the bees quietly superseding their queens. The second I found in a straw-hive, the 'last Mohican' of a little isolated bee-yard, and it was the same with my Berna.

"These 'last of the Mohican' represented the noblest successors of a good race which could maintain itself in spite of the poor treatment that had been given. The Berna colony had been in the same hive for 18 years; and when put into a large hive it developed wonderfully. The only task we had was simply to breed from this good stock, which, without exception, was the brown bee (black bee it is called in America), and to avoid any mixture of bad foreign blood. As may be readily understood, the *constancy* of those bees was exceedingly great; they were of a very fixed type, hence the excellent results with no great or long-continued effort. I have often, since, bred between parents—also brother and sister—with good success. The pure black or brown bee is very gentle, while a mixture of Italian blood produces veritable little devils.

"The qualities of our native bee, if pure, are indeed excellent. Thanks to their longevity, they cease brood-rearing in August, and then winter well (of course always in the open air). In spring they begin brood-rearing late (March), but then breed so intensely that they are in full height of population by the first part of May. The early cessation of breeding leaves a good stock of pollen in the hives, and this favors quick development in spring. In the beginning of my bee-career I possessed Italian hybrids. I was glad and proud to see as late as October those great brood-nests; but when spring came they were in a pitiful state; they had no pollen, and little honey or sugar syrup, and came into fullest development only when the harvest was over.

"A good queen works at her best for three years, and is then superseded in her fourth year. She then remains in the hive with her daughter till she dies. My good old *Sigrun* was superseded in June of her third year, and lived together with her daughter till May of the fourth year. Her daughter is now four years old, has still a very good brood-nest, but is now going to be superseded. Last year it was the same with my *Made*, which (four years old) worked as well as a

young queen, and was superseded early in July. She lived only eight or ten days with her daughter and then died.

"The brood-chamber of our hives is about 12 inches in width, 15 in height, and 14 to 17 in length. The capacity is, therefore, 1.5 to 1.8 cubic feet.

"You are right, that in Switzerland we produce very little comb honey, and that it would, perhaps, make some difference if we should run for comb honey. The chief point is that which you have mentioned; bees that do not swarm give, of course, far more honey than those given to swarming.

"As to the Carniolans, I must say that it is quite a different strain from the blacks, and that because the Carniolan flora is *totally different* from ours. There in autumn they have great areas of *Erica* (heather), giving a very good crop—one may say the chief crop; therefore swarms coming in May or June are easily strong enough for the *Erica* harvest.

"Last year I sent a number of queens to American bee-keepers, and should indeed like to know the results of this year. At all events it would be a test of our Swiss bees in America. I have sent a great number of queens into all parts of Germany, and a great many of them proved extraordinarily good. A queen I sent to Bohemia furnished 35 kilograms of honey, while the average of other colonies was but 6 kilograms.

"If this stock is to be introduced, the effort should be to keep it pure by mating in remote places with black drones. It is quite possible that the long voyage across the ocean may have a bad effect, but the offspring would hold good. The offspring, however, should be purely mated."

With such a number of mating-stations in Switzerland where pure mating may safely be counted on, it may seem to Dr. Bruennich an easy thing in a country the size of ours to find places for pure mating in still greater abundance. Switzerland is not a third as large as Illinois; but who knows a spot in all of Illinois where queens could be mated without interference from surrounding drones?

It is to be hoped that those who have tried these Swiss bees in this country will report as to results. Of course, as Dr. Bruennich says, a queen which has crossed the Atlantic may not be expected to do her best work; but her royal offspring should be as good as though no such journey had been made; and as to these, we should have reports. The great trouble, however, is as to pure mating. Even although well satisfied of the superiority of Italians over blacks, the Swiss blacks may be quite different from the blacks we have had. And whether we have interest in blacks of any kind, there is plenty of room for improvement of Italians; and as to this we may learn much from our Swiss brethren.

Marengo, Ill.

[If there are any of our readers who have this Bruennich stock of blacks in this country we should be pleased to get reports of what they are doing. Possibly our climatic conditions would render even this strain of blacks undesirable.—ED.]



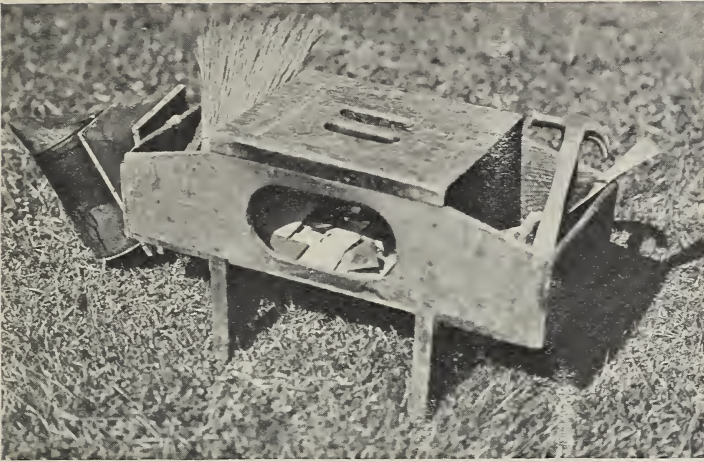


Fig. 1.—A handy seat and tool-box for bee-yard work.

### SPECIAL HIVE-STOOLS FOR ALL-DAY WORK IN THE BEE-YARD.

#### How the Roots Pack Their Bees for Outdoor Wintering.

BY E. R. ROOT.

In our Oct. 15th issue, page 635, we promised to show a scheme for working over hives, using in connection a special seat and tool-box. Where one is working over bees day after day, something of this kind is a great convenience. In the series of illustrations that were given, page 634 and 635, Oct. 15, we showed how one could use the cover-board for a seat; but for all-day work this is not as handy or as desirable as the special tool-box.

The above illustration shows what we have used, off and on, in our bee-yard for nearly thirty years. It was shown in one of the early editions of our A B C of Bee Culture, but was dropped out because we thought it of hardly sufficient importance to occupy space in that work. During all the years that have intervened, our apiarists have seemed to find it very handy. Both Mr. Bain and Mr. Pritchard consider it almost indispensable; so if you come to any one of our yards you will find the men carrying one around as they go, among the

hives. The top is made of  $\frac{7}{8}$  lumber, having two oblong holes in the center to provide a handle by which to carry the box. The legs are also of  $\frac{7}{8}$ , while the sides, ends, and bottom are of  $\frac{3}{4}$ . The compartment in the side, reached by the oval hole, is very handy for holding broken section pieces for record work, and other small articles, while the two compartments on each end usually hold the smoker fuel, hive-tools, hammer, bee-brush, queen-cages, and other articles of

like nature. The smoker has a hook on the bellows so that it can be carried in the manner shown. With this whole outfit one has practically all tools that he will need, including the smoker fuel for a day's work.

The exact dimensions of the seat are not important. The one we use is 13 inches high by 22 long, outside measurement.

#### EXAMINING COLONIES PREPARATORY TO THEIR FINAL WINTER SLEEP.

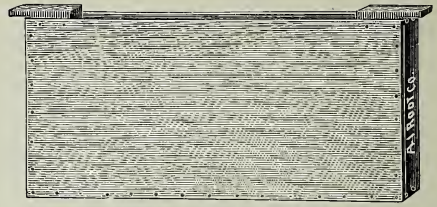
To understand fully the value of a tool or



Fig. 6.—Examining the frames to determine whether there are sufficient stores for winter.



appliance it is necessary to see it in actual use; so let us go out into the bee-yard, where we find Mr. Bain going over the apiary for the last time to see if the colonies have sufficient stores, and whether the brood-nests are contracted down to the proper capacity. We find him sitting on one of these hive-stools, as shown in Fig. 2, about to raise the cover from one of the double-walled chaff hives. Under the cover we find a tray made of  $\frac{3}{8}$  lumber, 6 inches deep, having a bottom of burlap, and filled with ordinary planer-shavings (see Fig. 3). While chaff is, perhaps, a little warmer, we use enough more of the shavings to make up for the difference. You will observe that this tray has the same length and width as the hive itself. The burlap bottom is nailed on without stretching the material, so as to leave plenty of sag. The apiarist lifts off the tray, and under it we find a super-cover, with tin binding for the ends to prevent warping. This is sealed down with propolis all around, making a hermetic sealing, or what we call a sealed cover. With the smoker in the right hand and the hive-tool, which he takes out of the box, in the left, Mr. Bain (see Fig. 4) pries up the cover, blows a little smoke in at the gap so made, removes the cover, and stations the same conveniently near. On opening the hive (see Fig. 6) he discovers that the combs are not filled as full as they might be, and therefore it will be necessary to give them another feed. He removes the frames that contain the least



Doolittle division-board feeder.

division-board on the outside, crowding the two frames just outside the feeder up next against the other frames.

In this way he goes over hive after hive; and as most of the colonies will probably require no more feeding, he puts back the super-cover for final sealing, adjusts the tray with its planer-shavings so as to align with the hive, taking care that, in doing so, he does not disarrange the super-cover beneath in such a way as to leave a gap for the escape of moisture up through the burlap on the bottom of the tray. In a few cases the super-covers have been found displaced in the spring, and in every instance the packing material has been found to be quite wet—particularly so over the place where the gap was made by the super-cover being pushed over to one side.

If the reader will turn to the editorial department he will see fuller particulars as to how we feed our bees for winter. The illustrations show how we pack our bees for outdoor wintering, using sealed covers.

Another feature to which we would call especial attention is the use of the contracted entrance-cleat. Our ordinary chaff-hive entrances are 12 inches long for the eight-frame hive, by  $\frac{7}{8}$  deep. A  $\frac{7}{8}$  cleat of wood with a slot on one side, 6 inches by  $\frac{3}{4}$ , is pushed in the entrance, reducing the opening

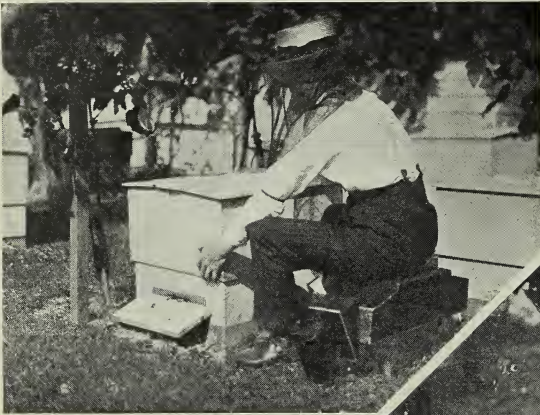


Fig. 2.—We prefer a deep telescoping cover to set over the packing-trays for our outdoor-wintered colonies.

stores, and slips in a Doolittle division-board feeder, and closes up the hive for the time being. Later in the day he comes back with a syrup-can, which is nothing more nor less than an ordinary watering-pot with the rose taken off, and pours in the feed (see Fig. 5). At a later time he removes the division-board feeder and puts in a chaff



Fig. 3.—Our top packing consists of a tray filled with planer-shavings.



Fig. 4.—The super-cover is made of three-eighths lumber, tin-bound at the ends. This should be sealed down by the bees to insure good wintering at Medina, and covered with the tray shown in Fig. 3.

to the space allowed by the slot on one side of the contracting cleat. This contraction we regard as very important. If the entrance is left like the one shown in Fig. 6 all winter, one is likely to find considerable loss of bees before spring. While it is absolutely essential that the bees have an entrance, it must be adapted to the size of the colony. Three-eighths by six inches is ample for an eight-frame colony of good size. If it occupies only about four or five frames we reduce the width of the opening to about four inches; but it is our rule to have all our colonies strong before they go into winter quarters. All nuclei and weak colonies are put in the cellar, or doubled up to make one good strong colony if they are to be wintered outdoors.

### A SURE WAY OF INTRODUCING QUEENS.

Why Queens are Often Balled Soon After they Emerge from the Cages.

BY B. F. DOBBS.

When the new queen arrives, go to the hive to which you wish to introduce her and take out two combs of sealed or hatching brood, being sure not to get the old queen. In their places put full sheets of foundation, then over the brood-chamber put a sheet of wire cloth, and set an empty hive-body on top. In this empty hive-body over the brood-chamber put the two combs of sealed brood with the live bees on them, and between the two combs put the caged queen. Make the entrance of the upper body just large enough so that one bee can come out at a time, and

be sure that it faces the opposite direction from the entrance of the lower body.

Under the conditions named above, all the old and flying bees will come out and go back to the lower hive, leaving only young bees on the two frames with the queen above. As a rule, these young bees will accept any thing in four or five days, and in this



Fig. 5.—Manner of pouring in feed from a common watering-pot into a Doolittle division-board feeder.

time the queen will have been released. She should be left in the upper hive until she is laying, which will probably be by the end of the four or five days.

When the queen is laying in the upper body, set this hive aside temporarily, removing the old queen from the lower hive; then, without putting the wire cloth back, set the upper hive on the lower one again. In 24 hours the queen will be found laying in the lower hive, or at least the two frames in the upper one will be covered with bees, so that the two frames of foundation can be removed from the lower hive and these two upper frames put back. If the queen is found in this upper hive on the two frames, do not touch her, but slip the two combs out and put in the lower hive as quietly as possible, and leave the colony alone for a few days.

The reason that so many queens are killed is that there are so many old bees in the hive at the time; and the queen, when she comes out from the cage, needs exercise, and goes over the combs so fast that these old bees catch her and ball her until they smother her to death. By the plan above outlined, the queen has a chance to get her exercise on the upper combs where there are but few bees; and when the bees of the hive below find the queen in the upper hive laying they never ball her, for she is heavy with eggs, and is conducting herself as a queen should. By this plan, moreover, the new queen is introduced before the old one is removed.

Flora, Ill.





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- 2 lbs. Sultana Raisins
- 3 lbs. Seeded Raisins
- 2 lbs. Muscatel Raisins
- 2 lbs. Calimyrna Figs
- 2 lbs. White Cooking Figs

#### Canned Fruits:

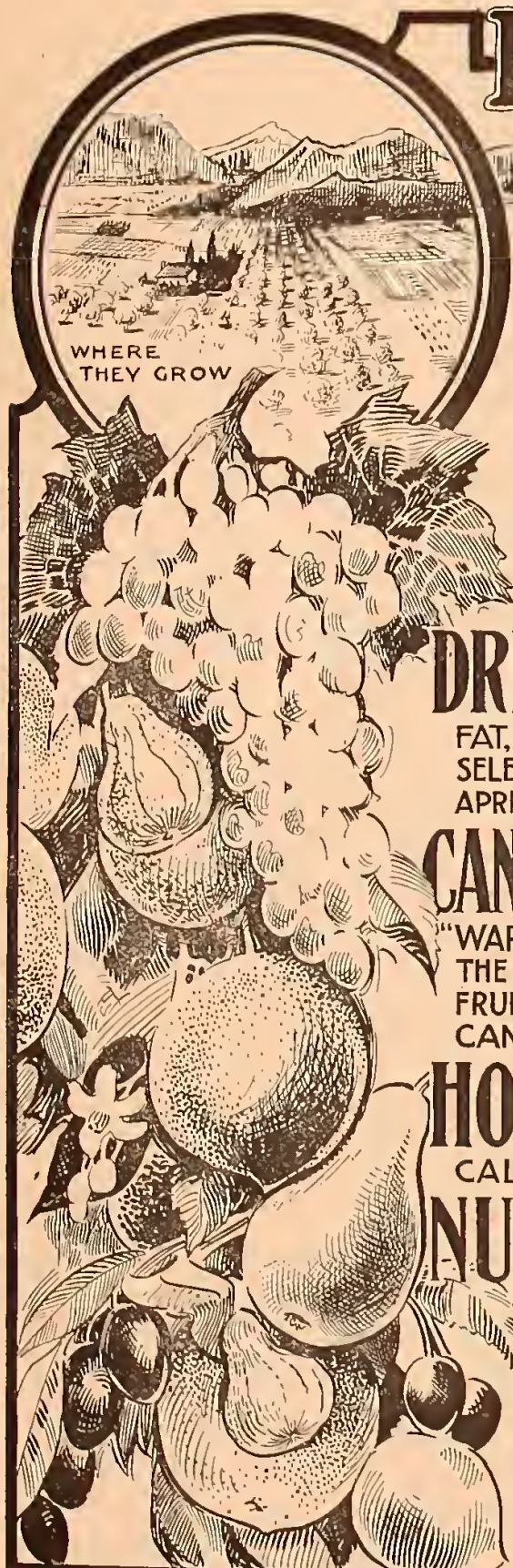
- 1 Can Whole Apricots
- 2 Cans Apricots
- 1 Can Pears
- 1 Can Muscat Grapes
- 1 Can Egg Plums
- 1 Can Black Cherries
- 1 Can Royal Ann Cherries
- 1 Can Lemon Cling Peaches
- 1 Can Sliced Lemon Cling Peaches
- 1 Can White Heath Cling Peaches

- 5 Pounds Fancy Soft-shell Walnuts
- 3 Pounds Fancy Soft-shell Almonds
- Half-gallon Pure Extracted Honey

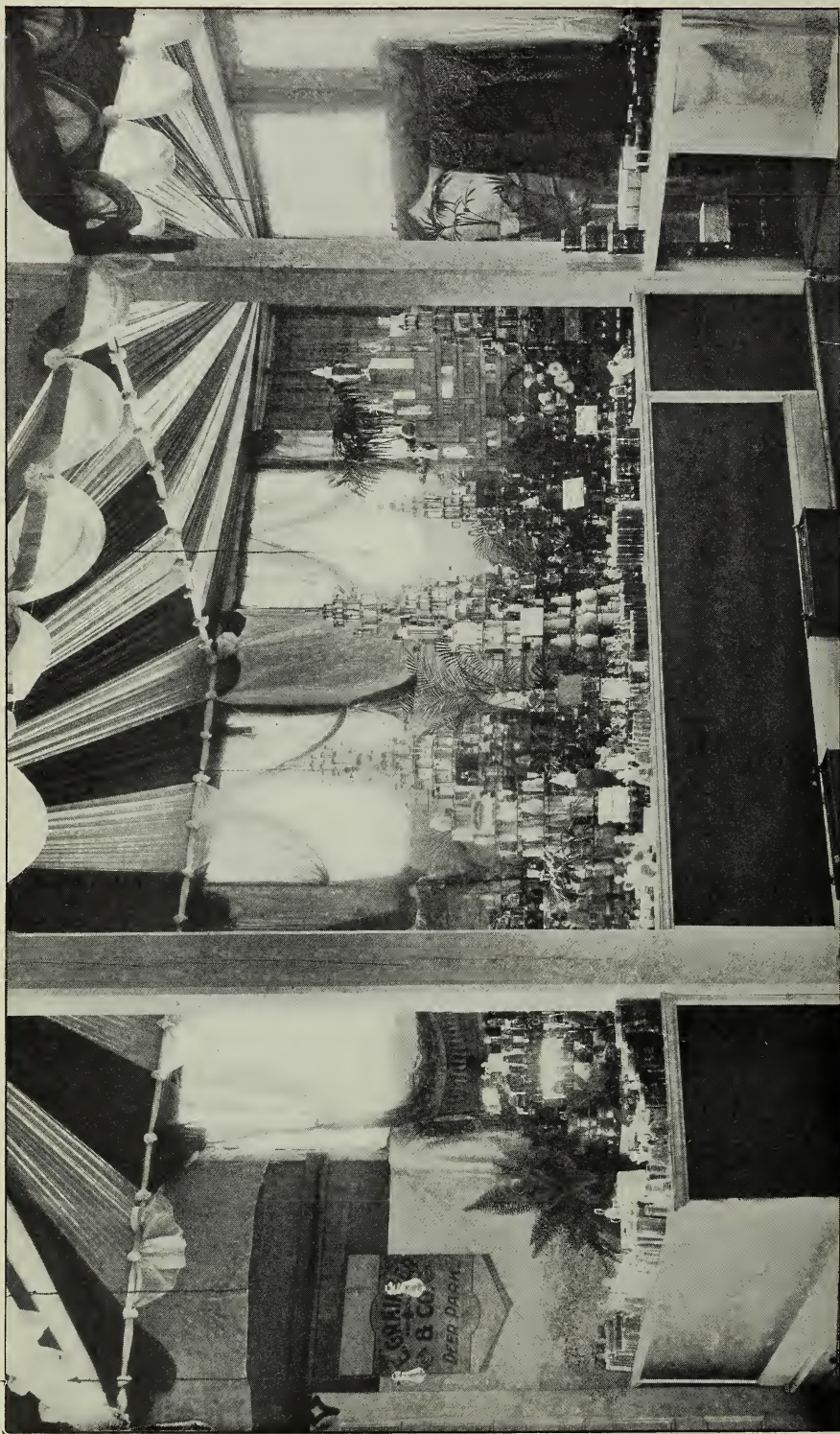


Reference First National Bank of Colton, Cal.

**California Fruit Products Co.**  
Ave. 200 **COLTON, CALIFORNIA.**







FIRST-PRIZE EXHIBIT OF HONEY AT THE CANADIAN NATIONAL EXHIBITION.

See Notes from Canada, last issue. Decorations in yellow, white, and green. Total amount of honey in exhibit, 2000 pounds.



## ALBERT J. KING.

## Sketch of the Life of one of the Pioneer American Bee-keepers.

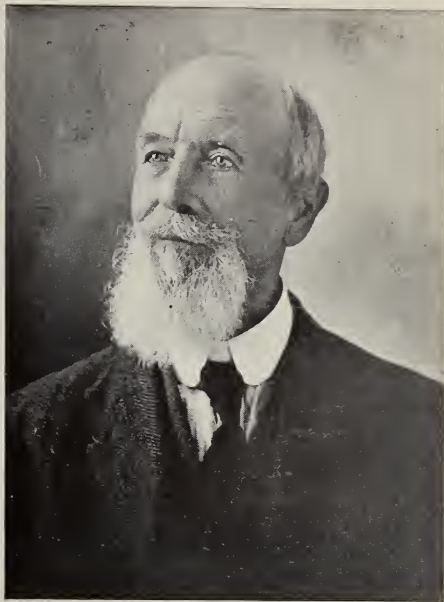
BY W. A. PRYAL.

Among the names that shine brightly in the small galaxy of pioneer bee-keepers, none are more luminous than those of the King brothers—Nelson H., Homer A., and Albert J. King. The first mentioned was long the bee-man of the trio; in fact, he tended the bees on the old family homestead, and yet little was known of him, as Homer was the active, energetic personage of the firm. However, I shall devote this sketch only to the last mentioned of these three brothers.

The coming of Langstroth's movable-frame hive and his imperishable work on the honey-bee and its management opened the gates to the great bee-world that lay practically hidden up to that time. Perhaps the secret that Langstroth unfolded would not long have remained such, for there were other Americans delving into the mysteries of bee-keeping; and it is no more than justice to Yankee ingenuity to say that their united labors would soon have perfected the movable frame, which had at some time previous to our great apiarian inventor's completion of the movable frame, as we now know it, been in use in rather crude form in portions of Europe, as is well known. But, nevertheless, our Langstroth was the first to perfect it, and to him justly belongs the credit. But the work of this remarkable apiarian inventor was augmented very soon afterward, or almost contemporaneously, by such men as Moses Quinby, John S. Harbison, Homer A. King, and several others. It has been contended that some of the improvements brought out by these men were infringements on the Langstroth patents; but of this I know not, nor is it my province to enter into a controversy that has long since been dead. It was unfortunate that, in the latter sixties and early seventies, there was some litigation over the matter that was costly and unprofitable to all parties concerned, if I am not mistaken.

Albert J. King was a schoolteacher; but during spare hours he helped his brothers in their home apiary at Nevada, Ohio.\* It

\* The above brings vividly to mind something that I believe is not mentioned in the preface to our A B C of Bee Culture. After catching the truant swarm of bees and locating them in the window of our factory, as I have described, I ran across a copy of H. A. King's "Bee-keeper's Textbook." As Nevada, Ohio, is only a short distance from Medina I made a trip to visit the factory where H. A. King was at that time (about 1885) manufacturing his "American" bee-hive. The factory was a sort of covered shed; but there were already enough orders for his new standard hives so that I saw great piles of beautiful smooth boards accurately cut out, and men engaged in nailing them together. There was a wheel in one side of the hive that could be turned in different directions so as to facilitate artificial swarming. I had quite a little talk with Mr. King, and was so much taken up with the American hive that I purchased the patent right for Medina Co. Soon after I arrived home I set about making hives. I think the only power we then had was a windmill. In



ALBERT J. KING.

One of the old bee-journal editors of 35 years ago.

was thus, through his association with his brothers, that, a generation ago, he was one of the best-known instructors in apiculture

a little time, however, the irregularity of the wind when it was most wanted annoyed us so much that a Bookwalter steam-engine was installed. As the American hives required a good many very wide boards, I hired a team and went to all the sawmills round about Medina to find some wide seasoned lumber. Our boys are preparing to give a picture of the old sawmill where I found my first boards wide enough to make bee-hives. These boards were poplar, or whitewood. They annoyed me so much, however, by warping and shrinking that our next installment was made of pine. During that period I read "The Bee-keeper's Textbook" over and over, and greedily devoured every word, advertisements and all, in King's periodical. A little later on I got Mr. Langstroth's book; but it was not until I had gotten an apiary pretty well started with nothing but American hives that I changed over to the Langstroth hive and Langstroth frame.

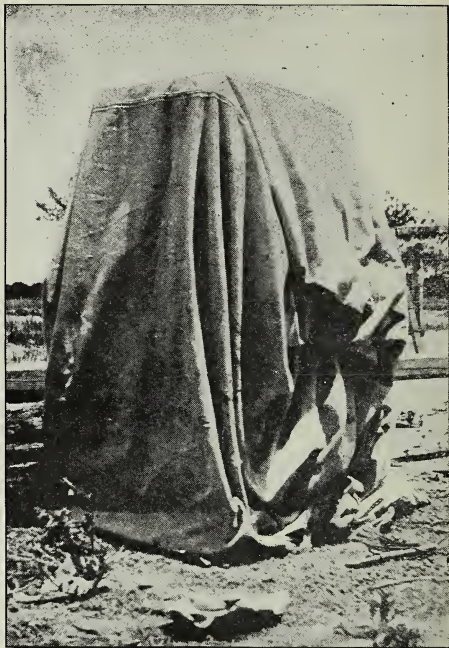
In my early articles for the *American Bee Journal*, which I persuaded Samuel Wagner to recommence (for it was stopped during the war), I wrote up the advantages of the American hive; and I must confess even now that friend King embodied in that hive some very desirable features. I soon learned, however, through the *American Bee Journal*, that by far the largest number of hives in use by the successful and progressive bee-keepers were of the Langstroth pattern, and finally went to work and transferred all of my apiary into Langstroth hives, cutting out the combs and fitting them, as best I could, into Langstroth frames. I afterward met one of the King brothers out in the desert in Arizona, and had quite a visit with him. Like many other bee-keepers, friend King was a good deal given to changing from one thing to another. At the time I first went to Nevada, aside from bee culture he was greatly taken up with some new invention that was going to "revolutionize" steam-engines. Mr. King got off on to something else, and let his journal go down; and as I look back it seems to me there were only a few who stuck to bees and bee culture, day and night, winter and summer, through a long series of years, as did your old friend A. I. Root.

By the way, it just occurs to me that friend King has the credit of establishing one of the first manufactories, if not the very first, devoted to making bee-hives and nothing else.—A. I. R.

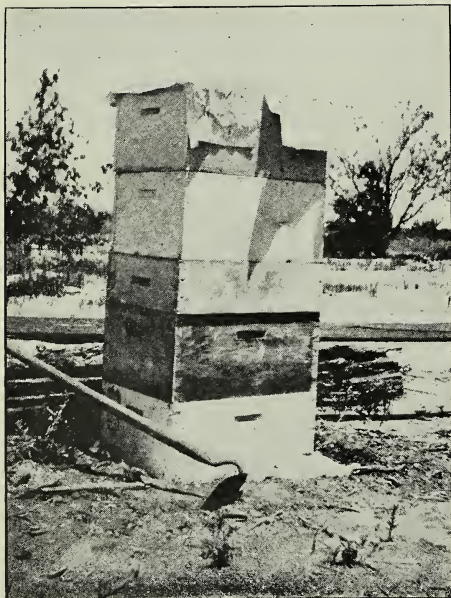
in this country. He was born March 14, 1836, and is now, in his 74th year, one of the grand old men of the bee-keeping fraternity. In his early life, while he was a teacher, he was initiated into the mysteries of bee-keeping by his brother Nelson. He assisted his brothers in getting out their "*Hints to Bee-keepers*," and also "*The Bee-keeper's Text-book*." The former had a sale of 35,000 copies, while the latter ran up to over 55,000, and had the largest sale of any bee-book up to the advent of "*The A B C of Bee Culture*." The last edition of the book was revised and brought out by the subject of this sketch in 1878, at which time he was editing *The Bee-keeper's Magazine* in New York.

While in New York, Mr. King demonstrated that it was entirely practicable to keep bees successfully in a big city right on the top of tall buildings. He was not only able to care for an increasing number of colonies, but he made them pay, for he produced much honey of good quality, and reared queens for his own use and for sale. He had 40 colonies on the top of the American Express Company's building, 35 on the Five Points Mission building, and 100 colonies on the roof of the building where his office was located.

Before going to New York, or about 1870, he was engaged with his brothers in Ohio in publishing *The Bee-keeper's Journal and Agricultural Repository*. If I remember correctly, it was about this time that Mrs. Ellen S. Tupper, who was probably the most gifted and at times, perhaps, the most erratic



Hives covered with a large wet cloth for confining the fumes of carbon bisulphide to kill wax-moths. See *Bee-keeping in the Southwest*, this issue.



Biediger's method of preparing hive-bodies for the purpose of fumigating to kill wax-worms. See *Bee-keeping in the Southwest*, this issue.

woman to devote her talent to apiculture, wrote for the bee-papers, and was a regular contributor to the King publications. With his brother Homer, Mr. King bought the *National Agriculturist*, and changed the name to the *National Agriculturist and Bee Journal*. In the fall of 1872 the first number of *The Bee-keeper's Magazine* appeared, and was published monthly thereafter for some fifteen years, I believe. It was a nicely gotten-up magazine, was well edited, and had quite an array of able contributors, some of whom are still living.

In the middle 80's Mr. King sold his interest in the apiarian-supply business, also the magazine and his several roof-apiaries. The larger apiary was bought by the Casanova Bros., who moved it to Cuba, where it was increased to 800 colonies by the superintendent, Mr. A. W. Osborn, a warm personal friend of Mr. King. Receiving a flattering offer from Glenn Bros., of Cuba, we next find Mr. King superintending their apiaries at Puerto Principe and vicinity. Previous to this time he had been sending Italian stock and supplies to Cuba. Returning to the United States in 1890, he was for a time located near Phoenix, Arizona, and in 1897 he moved to San Diego, where he now resides. In all those years he has been, in some manner or other, connected with bee-keeping, having as many as 600 colonies to look after some seasons.

Oakland, Cal.



## MARKETING CANDIED HONEY.

### A Temporary Storage-box for Candied Honey, which May be Taken Apart when the Honey is Candied.

BY JAMES ALLAN,  
*Pres. Southland Bee-keepers' Association.*

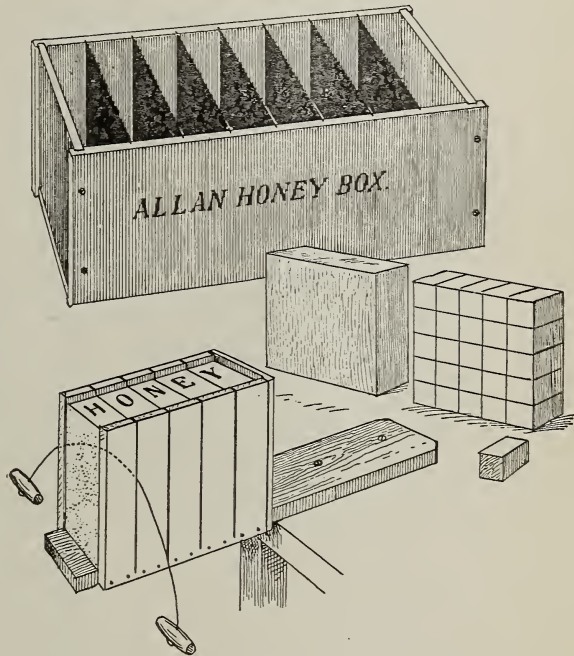
It is disappointing to me that the plan of cutting candied honey and wrapping it in parchment has made so little progress among the progressive bee-keepers of the States. Here in New Zealand I am looking forward to a time when the bulk of our honey will go on to the market in  $\frac{1}{2}$ -lb. pats, double wrapped in parchment. For the past two seasons this is the way I have placed my own crop on the market, with results extremely satisfactory.

With your permission I will describe to your readers my system of handling it. My honey is run from a four-frame automatic reversible extractor through a strainer into a small honey-tank capable of holding 850 lbs. From this tank, as the room is required, it is run into Allan honey-boxes, and immediately stored to granulate. These boxes are made from our New Zealand white pine, a soft wood (commonly used here for sending our butter to the London market). They are made from inch boards, the following being the inside measurements of the boxes: Length, 25 in.; depth,  $9\frac{1}{2}$ ; width, 9. The ends are let into the sides  $\frac{1}{4}$  in.; and both ends and sides are let into the bottom  $\frac{1}{4}$  inch. The sides are bored by the maker, and come to me in the flat ready to put together with screws. In the sides of the box at every  $3\frac{1}{2}$  inches a saw-cut is put  $\frac{1}{8}$  inch deep; and when the box is put together and filled with honey, tin slides are inserted at these saw-cuts, thus dividing the honey into 8 divisions, each  $9 \times 9\frac{1}{2} \times 3\frac{1}{2}$  inches. When the honey has granulated firm enough the box is unscrewed on a table, and the oblong of honey is turned out on the table,  $25 \times 9\frac{1}{2} \times 9$ . With a strong knife inserted beside each slide, it is divided into slices of the size given above, viz.,  $3\frac{1}{2} \times 9\frac{1}{2} \times 9$ . The next thing is to deal with these slices so as to cut each one into 25 pats, each  $3\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$ . For this purpose I use the Allan honey-cutter.

The sketch will give some idea of it. The sole-plate is 18 in. by  $3\frac{1}{2} \times 2$ . The sides are  $9 \times 9$ , and have 4 saw-cuts to allow the cutting wire to pass through. It is made fast to a table by two screws through the sole-plate. Into this cutter a slice of honey is placed, and cut first one way and then reversed and cut across, when, if the cutter is accurately made,

each piece or pat should measure exactly  $3\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$ , and weigh exactly  $\frac{1}{2}$  lb. These pats are then wrapped in water-white parchment, the first one being plain, the second having the brand and description printed on it.

Usually about June 1 (December 1 with you) we begin to cut our season's crop. I find it economizes time to have four workers at the job—one unscrewing boxes and packing away the wrapped honey; one cutting and two wrapping, working so we can easily dispose of a 100-lb. box every  $\frac{1}{2}$  hour, making it into 200  $\frac{1}{2}$ -lbs. of honey neatly wrapped and repacked for sale; or in a day of 8 hours 1600 lbs. can be cut, wrapped, and repacked, making 3200  $\frac{1}{2}$ -lb. pats. Of course,



A NEW ZEALAND WAY OF CUTTING UP CANDIED HONEY.

The honey is run directly into the divided storage-boxes from the extractor; and after it is candied the box is taken apart and the slabs separated by a knife pushed down close to each tin division. Each slab is then cut up into small "pats," with wire in the manner shown.

quicker work could be done, but that is our regular working pace.

The cost of this operation—if we divide the cost of the boxes over, say, five years (and if taken care of they will last much longer), will be, for box and paper, about  $\frac{1}{4}$  of a penny ( $\frac{1}{2}$  cent) per lb. The wages, each one can reckon for himself. The only further cost is the box into which they are packed for the market. I use one holding 24 lbs., costing 12 cents.

Now I have only to give you the result. On the open market, honey with us varies from  $3\frac{1}{2}$  to 4 pence in bulk (in 60-lb. tins). The very finest clover can rarely make  $4\frac{1}{2}$  pence, except in small quantities. Season

before last I cut about 4 tons, and sent it to a produce agent in Dunedin (100 miles away). I got account sales, which, after deducting 5 per cent commission, rillage, etc., gave me net 6 pence per lb. Some of this consignment was a few boxes just kept in store all summer, and kept its shape and appearance perfectly. This season I was changing my home; and to suit my own convenience I sold 3 tons in one hive at 5¼ pence net. To put it short, the increased value is 50 per cent, and a readier sale at that.

Wyndham, Southland, New Zealand.

## HOW FAR DO BEES FLY FOR HONEY?

### The Amount of Honey in the Combs has a Bearing on the Energy with Which the Bees Work.

BY C. W. DAYTON.

In 1894 I had about 40 colonies of pretty good Italians in an apiary, together with about 175 colonies of mixed stock. The bees of nearly every Italian colony brought honey from a distance of 4½ to 5 miles, and filled one or two comb-honey supers. There was no chance for mistake, for, immediately adjoining the apiary, in the direction of the orange-groves, were alkali patches about two miles in width. After this was about a mile of alfalfa that was pastured short, and then at least a mile of vegetable-gardens. After these gardens there began to be occasional half-dozen orange-trees in the door-yards for a distance of another mile, before the orange-groves became general. A mile and a half from the apiary I could hear the roar of the bees overhead, and near the orange-groves I could see them flying toward home. They flew slowly, because there was a coast wind that hindered them to such an extent that they would often alight on my clothes to rest as I drove along. These bees were decidedly yellow. There were no other bees that I know of, but these bees of the golden-yellow variety. Why bees do not always search the country over for that distance from the apiary, I can not tell.

Running east from our place here is a road which is nearly parallel with the Santa Monica range of mountains for about sixteen miles. The road is about a mile from the foot hills, and these foot hills are pastured, so the apiaries are located about a mile further up in the canyons. This makes a distance about two miles from the road. Down the slope from the road is the Los Angeles River, along which there are plenty of willows.

When the willows are blooming in the spring I often see large numbers of bees crossing the road going back and forth from the apiaries from these willows three miles away. These bees are the ordinary California bees. The land between the apiaries and the willows is always stubble or plowed, there being no trees or growing plants whatever, and only one house in the whole six-

teen miles. There is an almost constant coast wind which blows the scent of the willows in a direction away from the apiaries. It would seem to me that it would require a very close search on the part of the bees before they could find the willows. Considering the naked fields and the adverse winds, if there were any enticement to lead them they ought to go two miles further. I believe it requires some incentive to make bees work. Bees are not much more inclined to gather honey when they are not in immediate need of it than they are to rear a nice row of queen-cells when they already have a young thrifty queen.

Last spring, other bee-keepers obtained supers of new honey earlier than I did. There had been a great deal of starvation reported before the new honey came. Last year was an off one for honey, so I gave the bees almost no attention; but in February and March I was a little afraid they might be starving, so about ten days before I expected the new honey-flow to start I began to clear the combs, with the extractor, of the odds and ends of old honey that might be found. Instead of odds and ends, however, I found the combs in nearly every super, and nearly all the brood-combs, solidly sealed with dark inferior honey. Some of this I extracted; but from about a hundred supers I cut out the combs and let the bees build new ones from the starter of the old comb which the knife had left along the top-bars. The strange thing about it was that I extracted the first new honey from the colonies which had been compelled to build new combs in their supers. Later, however, when the bees were in the notion of swarming they left these frames, practically, or drew the combs only in a scanty way.

When I got the supers empty there was about two tons of poor-grade honey in the tanks that I actually wished was running in a stream down the canyon; yet the lower stories were so full that many colonies did not have more than one comb space for the rearing of brood. It must be that no work and no worry prolonged the lives of the old bees which were reared the year before, as the swarms seemed to be of the customary size; but the hives they came from did not have a pint of bees left behind to keep things going. The swarms would often pile up together and wait for days with no queen to hold them. Most of the time when they broke cluster on account of the queen not being with them they scattered throughout the whole apiary instead of returning to their own hive which they came from. I was lucky in having about 75 four-frame nuclei which were formed for an emergency, and these were transferred into the deserted hives, making the best honey-gathering colonies for the honey harvest, since the honey-flow did not start as soon as we calculated, some apiaries being nearly starved. It seems to be the safest to have enough honey to last, but not much left over to darken the new crop.

Chatsworth, Cal.



## THE ORANGE-TREE A PROFUSE YIELDER OF NECTAR.

BY R. POWELL.

The article by W. A. Pryal, page 236, April 15, on orange-trees and orange honey, interested me. Mr. Pryal gives a good many facts, but he is not familiar with the orange honey in Southern California. The trees blossom freely for six weeks, beginning about March 15, and continue through April. During that time of the year the weather is usually fine, with the exception of a few days when there is some fog in the mornings. There is no tree nor plant that yields honey so freely and surely as the orange, basswood not excepted. I kept bees in the basswood belt of Wisconsin for twenty years, and I have been here in this locality for fifteen years. There is scarcely a day while the trees are in bloom but that the branches can be shaken so as to wet with nectar the ground under the tree. The orange-pickers are always wet all day while they are at work; in fact, teams that are cultivating have to be washed after the day's work is done.

I get a yield of from 60 to 120 pounds of orange honey to the colony, spring count, every year. The honey is fine, and is strictly pure orange. It is the easiest honey to get pure from one source of which I have any knowledge. As is customary at this time of the year, one can buy orange honey by the carload.

One objection to keeping bees in the orange-belt is that the honey is very thin when first gathered, and this makes the bees swarm too much. The nectar comes so easily that the bees are not in shape to gather it if they are kept on the California plan.

### HOW MICE SOMETIMES GET INTO EMPTY HONEY-CANS.

Bee-keepers with out-apiaries in the West often carry their supply of water in their empty honey-cans; and when all of the water is used the screw caps are left off so that the cans may dry out. Mice in quest of water will some times jump into these cans for a drink, and the next morning the bee-man fills the can with honey without knowing about the mouse.

Riverside, Cal.

[If nectar is secreted so profusely as to wet down the orange-pickers and the horses that cultivate under the trees, it would seem that a sufficient number of colonies of bees should be put in the locality to take care of this sweetness that is going to waste. Why can't that be done? and if it can be, why isn't it done?

The reports from Florida and other parts of California have indicated that the orange is a scant yielder of nectar.

Friend Powell's statements are interesting; and if orange-blossom nectar is secreted in other localities as freely as this, we should be glad to get reports of it. A strictly pure

orange honey should have a good demand. The very name is enough to command a good market.—ED.]

## THE EVAPORATION OF WATER FROM NECTAR.

### Some Interesting Observations.

BY F. W. HALL.

Many times I have noticed the jets of pure water thrown off in some way by the bees during a heavy honey-flow, as referred to by Dr. Bruennich, page 397, July 1. I have often tasted these drops, and never could detect any sweet, so concluded that the bees had some way of withdrawing this water from the nectar other than by evaporating it inside the hive. The article, therefore, by Dr. Bruennich, is very interesting to me.

I have kept a colony (about the average of the yard) on the scales from May until October since the year 1898; and during the first few years I weighed the colony three times a day—early in the morning, at noon, and at night. The table of these weights was given in GLEANINGS, page 542, June 1, 1904. I noticed at the time that the weights in the morning were from  $\frac{1}{8}$  to  $\frac{1}{2}$  pound lighter than the weight the evening before, when the gain had been from six to ten pounds the previous day. At this slow rate of evaporation it would take a long time to ripen honey. When I shake the bees off the combs, very little honey will be thrown out after two days, even when a gain of ten pounds is being made per day. Whenever I find that the honey splashes out of the combs when I shake the bees off, I wait a few days before shaking off the rest of the bees. After two days' time the honey will not splash out as above stated.

During the ten years that I have kept the record of the weights I have found that there are many periods of four or five days' duration, right in the midst of a good honey-flow, when, on account of bad weather, the bees are not able to gather honey. The decrease in the weights in such periods is very slight—proving, without a doubt, that no such amount as four-fifths of the water had been taken into the hive by the bees, although the nectar had originally contained from 80 to 90 per cent of water. Either the nectar contains much less water than is generally supposed, or the bees have some way of getting rid of most of it before they reach the hives.

On June 20 of this year the first gain was made, and on July 3 it ended with a total increase in weight of 40½ pounds. For nine days after July 3 it rained so much that there was practically nothing to do; and yet after the nine days there was a loss of only 12 ounces. In spite of this, after the nine days the honey was so thick that no amount of shaking of the combs would cause it to splash out of the cells.

Storm Lake, Iowa.

## HEADS OF GRAIN FROM DIFFERENT FIELDS

BEES CARRY AN EGG THROUGH AN EXCLUDER AND THEN START A CELL IN A SUPER.

I think I have positive evidence that bees carry eggs to the near or remote parts of the hive. Last May I placed on hive No. 10 a Danzenbaker hive-body, with full combs, above the queen-excluding board. Later I raised this body and placed a comb-honey super between it and the hive proper, leaving the queen-excluding board on top of the brood-chamber. A few days later I removed the Danzenbaker hive-body, now on top of the honey-super, for the purpose of extracting. To my surprise I found a ripe queen-cell on the middle frame. There were no other eggs nor was there any brood on this frame nor on any of the other frames, all being fully supplied with honey capped.

Now, this hive-body which I thus used as an extracting-super above a queen-excluding board, and upon which the ripe queen-cell was found, had stood in the honey-house all winter, and was taken directly therefrom to hive No. 10. I do not think it reasonable that the queen found her way through the excluding-board, deposited this one egg, and then returned to the hive-body through the excluder. I can draw but one conclusion—the egg was carried up into the super by the bees.

Iowa Falls, Ia., Oct. 11.

T. F. RIGG.

[In our back volumes a number of instances were given showing that, under some conditions, bees do unquestionably move eggs from one part of the hive to another; but so far as we know they never do this except to supply a queen-cell.]

One or two cases were given where it appeared that hopelessly queenless colonies somehow purloined an egg from some neighboring hive. No one saw a bee carry the egg from one hive to the other; but the queen reared in one of the hives was of a different race from that in the hive.—ED.]

### HOW FAR WILL BEES FLY FOR HONEY?

I have a lot of basswood on my place, a good deal of it being old bush, and some of it large second growth. I seldom see any of my bees on this, but there are many wild honey-bees of different kinds. I live some three miles from the heavy bush to the south, and two and a half miles from the one at the north. Now, during the first ten days of the basswood flow last year we had a south wind nearly all the time, and I suppose that ninety-nine out of every hundred bees came from the south. A hive on the scales during this time showed a gain of from 10 to 17½ lbs. I believe that the scent has more to do with the flight of bees than any thing else. The first day that the wind blew from the north I could see bees passing me, traveling north. I followed them for at least two miles, when I had to turn off the road. The basswood bush was still half a mile beyond. When I reached home I found very few bees coming from the south.

### MILKWEED NOT HARD ON BEES.

Some time ago some one spoke about milkweed being hard on the bees; but it can not be the same as the milkweed we have here, which some call cottonweed. I have about one acre of this. It yields very heavily, and the bees are on it from early morning until dark. I have seen as many as five or six bees on one bunch of the blossoms, and there are often from four to six or even seven bunches on one plant. The bees seem to leave every thing else for it. They do not work on clover anywhere near the milkweed. The bees are often so thick on the milkweed that no one will walk through it. Of course, one acre is not enough to make any great difference in the honey yield from my fifty colonies.

Donaldson, Ont.

CHARLES BLAKE.

### SPLINTS MADE FROM CANE FISH-POLES.

Seeing a good many complaints from bee-keepers about bees gnawing splints out of brood-comb I am constrained to give my way of making splints that are absolutely ungnawable.

Take your fish-pole of last season (the kind commonly called cane-pole, that grows in any swamp south of the Mason and Dixon line, and which can be bought for ten cents in any place), and saw it into the desired lengths, not using the joints. These lengths can be split up into as small pieces as desired. They split

like ribbon, are as hard as iron, and very stiff and springy. The cane is so hard that it will turn the edge of an ordinary pocket-knife should one undertake to whittle it like wood. It won't whittle, but will split in any desired size. Boil them in wax, as Dr. Miller advises, and lay them on the foundation while hot. The best instrument with which to handle the hot splints is a pair of dental tweezers, as they are longer and more pointed than the ordinary kind.

Grand Junction, Col., Sept. 21.

R. D. TAIT.

[We are quite sure that cane would be a good substitute for sawed soft-wood splints. Strips of cane such as are used in making chair-bottoms have already been suggested. We doubt whether splints could be produced very cheaply from fish-poles, on account of the great amount of labor involved; but, at the same time, this idea offers an opportunity for any one to try the material, and report.—ED.]

### A STRONG COLONY ABSORBS THE BEES OF A WEAKER ONE.

Summer before last I took three colonies of bees to the farm and put them in an attic where there was already a very strong colony. After a time I noticed that the three new colonies were very weak in bees, although the hives contained plenty of stores. These three kept getting weaker, while the original hive, a Jumbo, got so populous that the bees loafed on the outside and along the floor. Finally, it dawned on me that the bees all coming in together got acquainted on the window-sill; and as they all flew in and out the same window, the window-sill was then the alighting-board instead of the front boards of the hives. I learned from this, that if I wished to keep colonies inside I must provide a separate exit for each one.

Carthage, Mo.

BENJ. C. AUTEN.

[Your experience is not unusual. Where two or three colonies are put with entrances close together, and one is very much stronger than the others, the strongest one is apt to draw from the weaker. The reason for this is that, when the bees are out flying, the strongest colony will make the strongest demonstration. The young bees that are out for a playspell, not having thoroughly marked their location, will join the big crowd, and become members of the big colony. It is, therefore, desirable to have colonies located far enough apart, with distinguishing objects like small shrubbery or trees near by so that each hive shall hold its own bees.

When you placed the three colonies in the attic the entrances were probably close together, and looked very much alike. It is not at all strange, then, that you found the big colony growing stronger and the weak ones weaker.—ED.]

### HIVES OF CONCRETE.

I take pleasure in handing you herewith a clipping from a recent issue of a paper called *China, Glass, and Lamps*, published at 121 Fourth Avenue, Pittsburg, Pa. Probably this has already been brought to your notice by your regular clipping bureau; but as I have not seen any mention of it in GLEANINGS I thought I would send it to you.

Whitestone, L. I., Oct. 26.

A. LOEHR.

[The clipping referred to is as follows:]

The object among others here is to provide a hive of concrete or cement whose walls are thick enough to exclude heat or cold, and whose interior will be large enough to receive any desired form of honey-frames, and which will afford at its entrance ventilating means, cleaning-out means, and means for the passage of the bees into and out of the hive.

[The idea of making a concrete bee-hive has been made the subject of a number of patents. We never considered the principle worth any thing, because the stone hive would chill the bees to death. It might answer in a hot country; but even there, it might like stone or cement would convey the hot rays of the sun clear through its walls to the cluster. A hive must be made of some material that is a non-conductor of heat and cold. The ordinary wooden hives are much better when made double-walled, the walls filled with some porous material that will hold air in small pockets, and at the same time prevent any circulation of air. If, therefore, we go clear to the other extreme and make a hive of some heat-conducting material like stone or metal we are doing the very thing that violates all accepted principles of bee-hive construction.—ED.]

### BRUSHING RATHER THAN SHAKING OUR FOUL-BROODY COMBS.

Please accept my thanks for your indorsement of my method of handling bees infected with foul brood.—D.



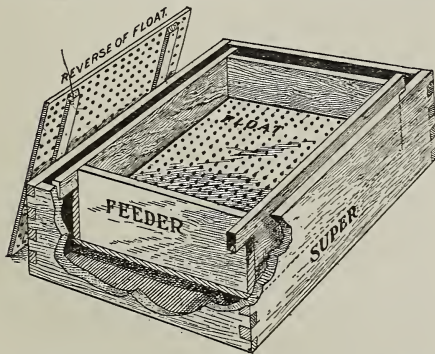
558. I will take this opportunity to state that in the future, in case I find a colony infected with foul brood, I will, before treating as described, shut the hive up at night, when all the bees are at home, and remove it beyond the range of the bees of the apiary, and treat them. By this means none of the bees, either old or young, can crawl into another hive and carry the disease with them, which I have had them do when treated in the apiary. Too much caution can not be exercised when stamping out this ruinous ailment.

Lyons, Kan., Oct. 6.

G. BOHRER.

#### A TIGHT BOX INSIDE A SUPER FOR EXTENSIVE WINTER FEEDING.

The feeder which I am now using is just the thing for providing winter stores on a large scale, as 25 pounds of syrup can be given at one time by simply putting a super under the brood-chamber, the super to hold the feeder. The illustration shows the construction of this feeder without further explanation. The float and the inside of the feeder are coated with paraffine to prevent leakage. There should be 2 inches space in the front of the feeder,  $\frac{1}{2}$  inch at the back,  $\frac{3}{4}$  of an inch on each side, giving plenty of room for the bees to get around it from the brood-chamber above.



It takes 48 hours in some cases for the bees to take all the syrup. When it is time to remove the feeders, the bees may sometimes be found hanging in a cluster under the brood-frames; but if the brood-chamber is raised and the bees smoked a little they will go up between the combs so that the feeder can be removed and the brood-chamber set back on the bottom-board. Ardsley-on-Hudson, N. Y. THOMAS J. JOHNSTON.

#### HOW TO REMOVE OLD COMBS FROM FRAMES WITHOUT SPOILING THE FRAMES.

I make use of a No. 9 boiler, which is just right for Langstroth frames, two-thirds full of water. When the water is boiling, I put in from four to eight frames, or as many as can be covered with the water. I press these down to the bottom of the boiler with a jouncer made from a board nearly as wide as the boiler and from 15 to 20 inches long. I hold the combs under the boiling water for a few seconds, and the old tough combs will be loosened. I jounce them up and down with this wide board until they are melted. Then with a wire hook I fish out the frames and dump them into a pot. If care is used, the frames will be nearly clean, but they can be very quickly scraped with a case-knife before they cool. This process can be repeated until there is enough melted comb in the boiler to press.

By the above plan I can do the work of two men and a boy cutting the combs out in the old way, and do better work besides. Then if the combs are diseased the boiling renders the frames safe again.

Colo, Iowa.

D. E. LHOMMEDIUE.

#### HONEY FROM HICKORY LIGHT-COLORED AND OF GOOD QUALITY.

By looking over my article of Sept. 1 you will see that the part of it referring to honey-dew was omitted, although you commented upon it. In reply to this I will say I am not mistaken, as I made too many observations, and ate the crystal drops off the hickory leaves, and saw thousands of bees gathering it, and even sticking fast to the leaves along about 10 A.M., when the sun had it well boiled down, and the bees would have to take a recess until about 3 P.M. when it would begin to

soften up again, and they would work on it until dark. I only wish that we might have a flow of hickory honey-dew at the close of each basswood flow in this locality. It is good enough for me and the bees also.

#### A SURE CURE FOR BEE-STINGS.

I have discovered a sure cure for bee-stings, and it is simply *alcohol*. Get the best proof alcohol, and carry a little vial of it in the vest or shirt pocket; and when a sting is received, simply remove the cork from the bottle and place the mouth of it over the wound after removing the sting, and reverse the bottle and hold it over the wound for about one minute, and keep moving it slightly over the wound; then remove and rub the alcohol into the skin; then apply the bottle again, and do this three or four times, and the pain is gone, and it will be but a few minutes before the swelling will also be gone. I have never had any swelling left after 15 minutes, and the pain is gone almost instantly. Don't be afraid to make a thorough application. I will guarantee it in every instance; and aside from this, there is nothing better for fresh cuts, barbed-wire cuts, or gun-shot wounds.

Hillsboro, Wis., Oct. 10.

ELIAS FOX.

[We don't know how the item concerning honey-dew was left out of the article when the reference in the footnote was left in. We are still of the opinion that honey-dew from hickory trees is dark. We base this opinion on the numerous reports that have come in.—ED.]

#### A SWARM ISSUES 151 HOURS BEFORE THE FIRST CELL IS SEALED.

I notice the interesting account, page 547, Sept. 1, in reference to the occasional issue of a top swarm before the sealing of any queen-cells. I have a single-frame observation hive in my bedroom window, which swarmed July 13. At the time of swarming, there were only two queen-cells in the hive, and neither of them was nearly complete. At midnight, July 19, 20, neither of these cells was sealed; but at 10:30 A.M., July 20, the more advanced one was sealed. At 10 A.M., July 28, this cell was still sealed; but at 9 P.M. the same day, the queen had hatched out. As the swarm issued between 12 noon, and 1 P.M., July 13, you will see that the more advanced queen-cell was not sealed till at least 151 hours after the departure of the swarm. This is the longest time that I have ever known (or read) to elapse between the departure of the swarm and the sealing of the first queen-cell. I should like to know if any one else has known of a longer time.

Another curious point in connection with this hive was that not a single drone had emerged from his cell up to 10:30 A.M., July 20. The bees are ordinary blacks. Skibbereen, Ireland, Sept. 20. W. F. WOLFE.

#### THE FLOUR METHOD OF INTRODUCING A SUCCESS.

I have tried the flour method of introducing queens a few times without the loss of one. This is my way: I go to a hive that I wish to requeen, and kill the old queen. Then I throw flour over all the bees on two or three frames and on the new queen to be introduced, and place her at once between the frames that were floured, and close the hive for at least four days. So far I have not lost a queen by this method.

At my home yard I have the golden Italians, and at my out-yard I had the three-banded bees through the honey season, but I have put some goldens there since. I find that the goldens do just as well as the three-banded, at least the strain of goldens I have now.

So far I have been requeening every other year, and I find it pays well. I have been breeding my own queens for the last four years, for I find that they are better than those that come through the mail.

Colden, N. Y., Sept. 28.

EMIL W. GUTEKUNST.

#### CLOTH MITTENS AS A PROTECTION AGAINST STINGS.

I extract my honey four or five weeks after the honey-flow, when there is absolutely nothing for the bees to work on; therefore they are terrible to sting. After trying several things to protect my hands I use now the common cloth mittens (not gloves), costing 10 cts. I get them a little too large for common use. They are a perfect protection. Being loose they do not touch the skin; and though at times they have been literally covered with crazy bees I have not averaged one sting per hive, and I take off my honey without escapes.

Hillsboro, Wis., Sept. 20.

GUSTAVE GROSS.

[Care must be taken to have the gloves very loose. Several times we have been severely stung by wearing cotton gloves that were too tight a fit.—ED.]

# OUR HOMES

By A. I. Root

Beware of false prophets which come to you in sheep's clothing; but inwardly they are devouring wolves.—MATT. 7: 15.

Thou shalt love thy neighbor as thyself.—LEV. 19: 18.

I am not going to talk about "false prophets" just now, friends; but I am going to talk to you about *other* people who come to you in sheep's clothing as expressed in our text; and I want every one of you, if it is a possible thing, to get the Philadelphia *Practical Farmer* for October 23 and read the department called the "Experience Pool." Now, if you have sent already for a specimen copy of the above periodical, as I have advised, do not send again for another sample, but take a trial subscription. The number I have mentioned is worth the subscription price for a whole year; and when you read it I think you will agree with me. This farm paper has in every issue, as I said above, what is called an "Experience Pool." The particular pool that has taken such a hold on me just now is topic 904. This is the way it reads:

Describe the various frauds, humbugs, and fakes that swindlers have used to cheat and defraud farmers in your section.

In response to the above, 25 different people, scattered throughout as many different States, tell their experience with fakes and humbugs. The first one is a fair sample of the rest. Three men came into their county and began canvassing among the farmers to sell a kitchen cabinet—something to help the good housewife, etc. One of the first things these men did was to attend the services in the various churches. The manager made a generous contribution to the minister's salary. Now, all this is right and proper, providing, of course, it is done because of a love for humanity, a love for God, and for Christian people. Well, these three men—no, I meant to say these wolves in sheep's clothing—sold a lot of their kitchen cabinets. They were expert, oily fellows. They were interested in the homes of the farmers, and in furnishing something that would be neat and tidy, and that would lighten the labors of the housewife. Well, this was a splendid thing to do, and I do not wonder they made many sales. Now, after they had gotten the thing worked up to the right point (those fellows knew their business, mind you) the manager went to one of the merchants and explained to him that they were called off to another State. He took out a memorandum-book and showed the names of the people who had bought cabinets. He told his victim that he had been looking for some good careful man who had the confidence of the people, and whom his company would trust, to continue this business of selling cabinets. He said it was a confidential deal, and he hoped the merchant would feel the necessity of keeping it to himself until they had got out of the way.

After these chaps had raked up the cash

and sold their notes to the banks on what they had taken, and had left town, this merchant found that the manager had worked the same game on every other merchant in town and in that vicinity. The cabinets that came on were not equal to the sample shown by the men, who traveled from house to house, and the place was flooded with cheap worthless tinware. The people who had been swindled felt so sore about it that they got the things out of sight as soon as they could. Now, the 25 other reports tell something a good deal in the same line. Here are some clippings from them:

A stranger, claiming to represent a telephone company, was along securing right of way along the farms. Where damage was likely to be done by the construction of the line he would give the land-owner one or two dollars. For this money he secured a receipt. Now, this receipt later on turned up as a note, and had to be paid.

A few years ago a young man of my acquaintance imagined he was sick. He sent to a company at Buffalo, N. Y., \$60 of hard-earned money, and he took their "dope" for six or eight months. Finally he threw their slop away and got well. I say got well, but I doubt his ever being sick—just his imagination.

A neighbor, an old and diffident man, but a good farmer and a zealous Christian, paid \$1500 for a State right to make and sell a certain powder, a panacea for fruit-trees in the State of Tennessee, to keep away pests and to make the trees bear. He never went to Tennessee to sell the powder, which, of course, was a perfect humbug; but he had to sell his farm to raise the \$1500, and he lived a sad and very economical life until his death.

A dishonest commission man from the city of B—heard that my neighbor raised each year great numbers of sweet potatoes, so he came around just after the crop was housed, and promised at least \$2.15 per crate (3 bushels) and thus secured the promise of 400 bushels from my neighbor. This dishonest fellow was sharp enough, however, to make the promise of \$2.15 per crate a verbal one, and in the presence of no witnesses. Hence after the shipment was made the dishonest commission man refused to keep his promise of \$2.15 per crate, and, adding insult to injury, wrote my neighbor that the shipment was damaged and half rotten when received. He offered \$1.10 per crate or threatened to return them. What could be done but accept the offered price and suffer the loss, for the distance was too far to go and see for himself?

A few years back a good-looking stranger introduced a new kind of wheat or oats, or some other grain, and agreed to buy the crop at a price away above what farmers usually get. They sold poor ordinary seed; and not only that, they introduced the seeds of wild carrots and other things that had never been known before in that locality. Instead of furnishing the farmers something choice for the big price they received, they bought up the cheapest fraudulent seed—weed seeds and all. Recent legislation has probably put a stop to a good deal of this work of selling to our farmers the seeds of noxious weeds. I need not speak of the "spectacle" fiend, for that has been worked till most people and most localities are posted.

Now, traveling swindlers of any kind are bad, and most people are now aware that if they listen to a stranger or put their names to any sort of paper in the hands of a stranger, they are running a great risk. The wolves and coyotes that steal your chickens are bad things; but they are honest and reliable when compared with intelligent men—that is, intelligent-looking men—who put on "sheep's clothing" just because it gives them a better



chance to scoop up the farmer's hard earnings. In one of these reports in the *Practical Farmer* a college professor owns up that he *himself* got swindled out of a hundred dollars. Of course, there is usually a little fault on *both* sides. It is very much safer and better to avoid trusting *anybody* who has only a transient reputation. Buy what you want of somebody who has been in business for years, and has earned a reputation. No matter what strangers may tell you, do not be in a hurry to place confidence in their statements. It rejoices my heart to see how much our farm papers are doing to protect the public and expose frauds. Almost every State in the Union has now one or more good farm papers, and they are edited by good bright high-toned moral men. I have as yet seen only one farm paper on the wrong side of the temperance question, and during the past summer I have been glancing over nearly all the agricultural papers of the United States. I have done it, largely because I wanted to see what was being done to educate and lift up our rural people. Yes, it rejoices my heart to be *among the crowd* of workers that are now devoted to outdoor industries. The man who would plan to swindle a town or a community, and set about it by going to church, making a contribution, and winning the respect and confidence of Christian people, that he may in the end run off with their money, ought to be behind the iron bars, and live on bread and water for the rest of his life. He not only wrongs the community, but he hurts and degrades the cause and name of the Lord Jesus Christ.

Sometimes some of us are in too much of a hurry to think evil of people we do not know; but I am afraid there is a tendency of late to be too ready to give credence to the statements of wolves who come among us in sheep's clothing.

Now, there is another side to this story. You will notice I have another text—"Thou shalt love thy neighbor as thyself." If all mankind could be converted so that all selfishness and greed were completely rooted out of every heart, all of these troubles would end. When one of these wolves in sheep's clothing sells somebody counterfeit money, you say, "Good enough for him;" for a man whose heart is right before God and his fellow-man would have no use for counterfeit money. Some years ago one of these slick chaps came to me and said, "Mr. Root, if you will just give me a few minutes of your time I will show you something that will cost you only 25 cents, and you can sell it right along for a dollar."

I told the man I did not want any such chance—I was not in that kind of business; and he seemed astonished to learn that I would not talk with him nor even look at his patent right; and I still think, as I did then, that any man who is willing to take from his friends and neighbors (or from anybody else, for that matter) a dollar for something that costs him only 25 cents, ought to be ashamed of himself. There are no such people in the *kingdom of heaven*. Let me digress a little.

I happened to say to an editorial friend of mine that I was going to use the text I have to-day, and that our rural people need constant warning, when he replied something as follows:

"Mr. Root, that is all right and good; but I have often wondered that you did not in your talk take up the grafting schemes and bribes that are going on in the great cities. It is positively alarming, and it will be the wreck and ruin of our nation if it is not stopped."

I replied:

"Well, here is a great work for our city papers. Let them show up grafting in high places, without scruple. Hold these men up to the limelight of public opinion, no matter where it hits nor whom it hits."

He replied:

"Mr. Root, that is all right; but I tell you it is not an *easy* thing to do. Here a while ago I had the full facts in regard to a most shameful grafting, and was prepared to show the man up and take the consequences. I went to my informant and told him what I proposed to do, and said I might get sued for libel. He said, 'Go ahead,' and added that he would come forward as a witness and help me. Before I got my article in print, however, he came to me and said he *could not do it*. The man stood high in society, had respectable connections, and had always enjoyed a fairly good reputation; and because he backed out I had to give it up."

Now, friends, we have reason to believe there is more or less of this work going on all over our land. In the city of Zanesville, Ohio, a business man had the courage to go ahead and prosecute the violators of our recently enacted temperance laws; and so successful was he that the speakeasies of that place were made to disgorge \$30,000 of their ill-gotten gains through the efforts of one man. When the police of the city were determined not to make any arrests he compelled them to do their duty according to their oaths of office. As a consequence his place of business was recently dynamited; and a short time later, that same night, his house was badly wrecked by two successive charges of dynamite. His wife very narrowly escaped death.\* This is what one sometimes gets when he makes a stir because our laws are not enforced; and while I am about it I wish to say that if the good people of Zanesville

\* Since the above was dictated I find in the *Cleveland Plain Dealer* the following:

COLUMBUS, O., Oct. 28.—The tax paid by illicit retailers of liquor apprehended by the liquor-tax deputies in the State Dairy and Food Commissioner's office this year will more than equal the total expense of operating the department. The legislature appropriated nearly \$85,000 for the department, and the tax will exceed that sum.

Last year the names of 264 persons were certified to the Auditor of State to be placed on the duplicate for the liquor tax, and this year the number will not be under 300.

The biggest "killing" was at Zanesville, where 52 saloonists continued in business after the county voted dry. It is a stand-off between the wet and dry territory as to which furnishes more violators.

Still later we get the following:

Dear Mr. Root:—The good people of Zanesville have, I understand, taken care of the loss sustained by D. B. Gary. The money loss was not so great as it might have been; a few hundred dollars covered the entire loss. I am told the people of Zanesville quietly raised the money and handed it to Mr. Gary. There will be no need of making it a State matter.

F. L. DUSTMAN,  
Columbus, O., Nov. 3.

Editor Ohio American Issue.

and Muskingum Co. do not make good what that man has lost because of insisting on the enforcement of law against blind tigers and speakeasies, the State of Ohio should make him a contribution of at least a part of what he recovered for the State. I am ready, and will be glad to do my part. It is a disgrace to our whole country and nation that these revelations should come to us so constantly, that there are so many people who do not love their neighbors as themselves enough to hold them back from this constant desire to grab the money belonging to our towns or counties, our different States, or the whole United States. With our temperance revivals, I have been expecting and predicting a revival in morals generally; and may God speed the day when "his will" will be done and "his kingdom" come, not only throughout our rural communities, but in our towns and cities, and finally throughout the whole earth, "as it is in heaven."

#### DOES A CIGAR INDICATE A GENTLEMAN?

Several times lately my soul has been vexed to notice in the fashion-plates and magazines, when they wanted to picture a well-dressed, up-to-date gentleman of refinement, they felt obliged to put a cigar either in his mouth or between his fingers. God forbid that this mistaken notion of what is genteel should go on any longer. The *Philadelphia Farm Journal* for November hits the nail on the head in the following editorial:

A good many men advertise clothing by publishing the picture of young men dressed in the height of fashion, capping the climax by a cigar in the fingers or mouth. Probably they think that this is very "taking." It is. Thousands of boys are made cigarette and cigar and even nasty pipe smokers just by that thing. Fifty fathers and mothers, by writing to these manufacturers, might put this matter to them so strongly that they would leave that cigar out of their advertisements. If they did not, it would be right to shut every paper that inserts such matter out of the home, and buy no clothing of the men who are in this way dragging our boys down. E. L. V.

May God be praised that there are at least a few of our farm papers that dare to come out thus strongly against the tobacco habit. Perhaps they will lose subscribers by so doing, but I am sure they will gain more by inducing all good men and women (especially fathers and mothers) to rally around and support a periodical that dares to rebuke sin in high places.

#### BRADENTOWN, FLA., FROM AN EVANGELIST'S STAND-POINT.

Mr. Root.—Enclosed find a clipping from the *Christian Advocate* in regard to your old Florida home town. Why don't you go up to your home in the woods again, and tell us something of those happy people who used to sing one of the most beautiful songs—

*Lord, lift me up and let me stand?*

I have only a few bees, but I love GLEANINGS more than any other paper. CHAS. H. REGISTER.  
Lake Butler, Florida, July 27.

Below is the clipping referred to. Perhaps I should explain that the writer, Rev. J. B. Culpepper, is the evangelist who conducted the great revival in Manatee Co. last spring and summer; and I believe all he says about

Bradentown and vicinity is true. While I am about it I wish to assure friend Register that I have not forgotten my first "cabin in the woods;" but Mrs. Root and I are getting almost too old to go up to Northern Michigan during the heat of the summer and down to Florida when winter comes. I have been planning all summer to go up there; but so many duties here at Medina have called me that I have not been able to get away.

#### A LETTER FROM BRO. CULPEPPER.

Mr. Editor.—Were you ever in Bradentown? If not, it will pay you to go. You know Scott—Sam, I mean. It would not sound natural not to put his handle on him. He is an Englishman, with all their best qualities brought over and the bad ones left. He is one of the few that even rheumatism can't shut up. Well, he invited us there. We soon met Bro. Beck, the Baptist pastor. He is a strong, good man, scholarly, broad, religious. Henderson, the Presbyterian pastor, is O. K., too. These three men, who have the confidence of the people, were the main leaders in the campaign, though ably seconded by strong consecrated laymen, of the above and other churches. Bros. Mann, of Manatee, and Wier, of Palmetto, came often.

This meeting reminded me of a storm, sweeping over a forest, taking down the tall timber, but leaving the saplings and bushes.

Florida has no better farming section than that around Bradentown. They grow the very best celery, tomatoes, lettuce, etc. The largest grape fruit and orange grove in the world is there. It is a splendid cattle country, while the waters abound in fish. I want to see an annual camp-meeting in Bradentown, where thousands will gather and worship.

I think all the worn-out and some of the not worn-out preachers ought to live down there. I know no nicer, better people to live among or die in the midst of.

I predict the consolidation of Bradentown and Manatee, the rapid growth of the towns, and of that entire section.

Mr. Editor, there isn't a bit of a joke in me when I say those are the finest sort of folks. Why, sir, a tent full of their women show refinement and culture like unto our cities two hundred years old. Many of them are religious too.

Burke, while doing his part of the preaching to the grown folks, had a large fine choir which gave great music, and also held some great children's services, which must tell on the destinies of that town for a decade to come. J. B. CULPEPPER.

#### STORMS, TORNADOES, AND HURRICANES IN SOUTHWEST FLORIDA.

The people in the Manatee region are fond of saying that they have never had any tidal waves, disastrous blows, nor any thing of that sort, in that region. Notwithstanding this, however, I have always been incredulous; and when I saw the recent reports of the damage done in Key West, Miami, and along the eastern coast, I felt anxious about our Florida home. I wrote neighbor Rood, inquiring if the terrible storm had affected our cottage or done any damage in the neighborhood. Below is his reply:

Dear Mr. Root.—We had no storm at this place whatever, but I note that your barometer was very low—the lowest that I had ever seen, and we remarked about it several times during the day; but we did not at any time feel any thing that we thought was a storm, and did not know about it till we saw it in the papers the next day. E. B. ROOD.

Bradentown, Fla., Oct. 19, 1909.

Of course, this incident does not settle the question, but it does seem a little strange that they should entirely escape once more when the east coast has had, to my knowledge, several very disastrous blows.



## POULTRY DEPARTMENT

By A. I. ROOT.

### STILL MORE "DISCOVERIES."

Yes, I am making lots of progress with my new incubator and chickens. My discoveries may not be exactly new to the great poultry world, but they are new to me, and I think they are to most of you. I have been very curious to know exactly how the chick gets out of the shell. We used to read in books that the mother-hen assists the chick in working its way and getting out into the world; but I guess all are agreed now that this is only fiction. I think it has been suggested, too, that the chick breaks the shell when it gets developed to such an extent that it enlarges enough to grow, and bursts the shell; and I believe this is partly true. But the fact remains, however, that, when every thing goes on as it should go, the chick breaks away the shell clear around so that the shell separates into two pieces—the smaller part coming off very much as the cap comes off from the cell of a worker-bee. The bee gnaws clear around until the top lifts up like the lid of a tea-pot, the cap often hanging, as it were, hinged like the tea-pot lid. Well, when every thing is right with the hatching of an egg, it opens up something like that. Now, how does the chick cut the egg so as to make a ring clear around? It must turn around in the shell. I think we have read that it does it by repeated strokes of its bill; but I have tried in vain to hear the strokes. I have repeatedly held eggs up to my ear when the chick was part way around, but I never could hear any thing. Let me digress a little.

If you want to watch a sitting hen to see how she manages about rolling and cooling her eggs, you will have to be very sly and careful; for she will not go through with the performance when she is aware that anybody is watching her, and she is pretty sharp and sly about it. When I placed the sitting hen in a box near my pillow I went to sleep with my ear against the side of the box; it was an hour or more before she became accustomed to things so she would go to moving her eggs around. When a young pullet goes on the nest to lay she sometimes stays on the eggs an hour or more, especially with her first egg; and if nobody is near to hinder her by his prying eyes, she usually busies herself during this hour by picking up straws and placing them around her nest, making it look like a shapely built bird's-nest; but if she catches a glimpse of your inquisitive eyes over her back, or from any other point of view, she stops her work at once, and remains as "mum" as can be.

Well, now, this chick coming out of the shell is easily embarrassed in the same way. If there is any noise or disturbance it ceases work. In order to watch the process, I removed the whole top of the egg-shell, where

the air-bubble is, without breaking the white delicate membrane. I have done this several times, and I can see the movement of the chick under this membrane. Well, whenever there is any jar or disturbance it stops work. Just recently I placed some hatching eggs against the cloth-cover side of my incubator. Then I slipped up very quietly and placed my ear against the cloth, and I distinctly heard the chick cutting or breaking the shell; and what surprised me was that its strokes were almost as regular as the ticking of a watch; even though the top of the egg was entirely removed, it took no advantage of this. It cut out its regular circle just the same. Sometimes when the cell is very thick, and the membrane also, I think the chick lacks strength and perhaps energy enough to break its way out into the world; and I believe a little encouragement sometimes is a help.\* But the only form of encouragement that has ever commended itself very much to me is to have some other chicks hatching at the same time (of course this is almost invariably the case), and when it hears them chirp it seems to give it enthusiasm for its work.

Now, you would think that one chick chirps just like another. Not so. There is as much difference in the tones of their voices as in the voices of human beings; and it is just beautiful music to my ear to hear the succession of chirps from chicks that are not yet out of the shell. Some will be on a high key, and some low; and they seem to answer each other. After they get free from the shell, and tumble down against that hot boiler covered with flannel, they seem to be just where they ought to be. As I have said before, they dry out and get handsome in a surprisingly short period of time.

The first hatch from my *newly invented* incubator, as described in the last issue, was only five chicks from ten eggs. One reason for it was that I put the ten eggs in the incubator before I had learned to handle it. It is one thing to invent a machine, and it is often quite another thing to learn how to manipulate it. Ask the Wright brothers what they think about this statement.

Well, without a thermostat my incubator had a rather big range from high to low. The principal trouble was because the oil I

\*For a time I was considerably taken up with the Philo method of helping chickens out of the shell where they seemed unable to get out themselves; but after quite a little experience during the summer with my incubator work I decided I made mischief by taking them out of the shell before they were ready, as many times or more than I helped the chicken that could have never gotten out. If the chick is helped out a little too soon it may live, it is true; but it ought not to come out until it has fully absorbed and taken up all the liquid inside of the shell so as to come out dry and clean. When the egg is pipped, and you wait 24 hours, and the chick does not seem to be making progress, you naturally think it needs a little help; but how are you to be *sure* it would not have gotten out all right *without* help? It is like taking medicine. Did the medicine cure you, or would you have gotten along just as well (or may be *better*) without any medicine at all? Who can answer? Now, I may change my mind after further experiment, but at present I very much doubt whether it pays to try to help chickens out of the shell.

used in my lamp would gum up the wick. I sent to the Standard Oil Co. and got some high-grade oil made specially for incubators. Montgomery Ward & Co. furnish this same incubator oil at 16½ cts. per gallon. Well, I poured all the oil out of my lamps, put in a new wick, and filled them up with new oil. Then I adjusted the flame down low at about the point where I had been using it. As this new oil gave more heat I was obliged to turn the flame down considerably lower; but when I got to the right point it stayed "right there;" and, best of all, the thermometer "stayed right there." It has now been running four days. The quantity of oil consumed is insignificant, and the thermometer has not varied more than one or two degrees. The lamp has not been touched during all this time. By manipulating the little damper in the top of the chimney (see last issue), the temperature can be controlled very nicely; and if you can work your incubator in a cellar where the temperature changes but very little, there is surely no need of a thermostat to control the temperature. Let us now go back to the five chicks from ten eggs.

After they had been on the top shelf of the incubator with their heads out in the open air, and their bodies up against the warm boiler for 24 hours, I put them outdoors with a hen I found at my next-door neighbor's that wanted to sit. I found her on a couple of china eggs. She was at first quite rebellious; and when I took her china eggs away, and gave her the five chicks instead, the situation was evidently beyond her comprehension. When the chicks began to peep pitiously, however, for some kind of recognition, she finally condescended to recognize them, and finally selected phrases from her hen vocabulary that they would understand. This introduction was made after dark. I left her with the chicks one whole day. The second day, as the sun was shining brightly, even though the air was frosty, I thought I would let her take them out. Just as I opened the door and was standing by to see how they behaved with their new step-mother (now out on the grass), somebody called me on important business, and so I forgot all about my five precious chickens until some time in the afternoon. When I went out to her little house where she had been confined with the little chicks, no sign of a hen was to be seen; but when I raised the cover and looked inside, my heart gave a great thump. There lay my five flossy, golden-yellow beauties, stretched out, apparently, "cold and stiff in death." When I took hold of one of them it ventured to open its eyes a little in a pitiful and mournful way as much as to say, "Oh! why did you leave us to suffer and die in this way?" They were so cold and stiff, that, when I picked up one by its little yellow leg, its body was even then quite rigid. I gathered them up in my hands, rushed to the incubator, and laid them on top of some eggs that had not yet hatched, closed the incubator, and waited a couple of hours. Then there was a little symptom of life. In half a day most of them staggered

about in a sort of drunken way. Mrs. Root suggested that the mother-hen would be better than that hot incubator. Now let us go back. Just as soon as I got the chicks in a warm place I went over to my neighbor's, and there stood my stupid hen by the fence, wanting to get on her nest with her two china eggs. I felt like "boxing her ears" for being so heartless as to go off and leave her chicks in that way. But it does not pay to quarrel with a mother-hen when she has a brood of chickens to take care of, about the first of November. I put her back in her box, and put the chicks under her. About 10 o'clock I went out to see whether they had come to life. At first I could not find them; but finally I discovered them standing on their tip toes with their bodies up under her wings, and their little heads sticking out among her feathers to get the life-giving fresh air, even though it was a frosty night. Well, now, did this chill give them dysentery, or did they get "pasted up behind"? Not a bit of it. The chill happened about a week ago, and now they are running all over the neighborhood along with their mother—yes, clear over to where I found her sitting on the china eggs, and they are about the spryest and nicest lot of chicks I ever saw.

Now, there is a moral right here—perhaps two or three of them. Getting chilled does not *always* hurt chicks; and if we human beings lived as we ought to live, as Terry and Fletcher do, for instance, getting chilled would not hurt us either.

These chicks have had nothing but baby-chick food and pure water. They never had any mashes or messes of any sort.

Just now, Nov. 1, there is a prospect that Mrs. Root and I may not get off to Florida next week, as we intended, as she has a touch of her old complaint, pleurisy. Our family doctor said she would probably be all right in a day or two without any medicine; but his advice was this: "Let her stay in bed covered up warm, but open all the doors and windows." May God be praised that we have at least a few doctors nowadays who give such sensible advice as the above instead of drugs. What saved the chickens, and makes them strong and robust, will do the same thing for the human family.

I omitted to mention that the doctor told her to take but little or no food until this attack had gone by; and he recommended milk if she could take it, rather than any solid food of any kind.

#### THE "CHICKEN BUSINESS" IN FLORIDA.

You who have been following my Florida notes for the past three winters know already what I think of it. It seems to me that Florida is about the nicest place in the world to keep chickens. You do not need any expensive structures to get through winter; and, in fact, you can keep chickens there without even a *box* or *barrel*; yes, and you can *raise* chicks too, for that matter, if you choose. Of course, you will need to hunt the eggs, and perhaps you will decide that you need some kind of protection with



poultry-netting to keep the "varmints" from catching the little chickens. The big ones will roost in the trees, and do all right. Now, with all of these wonderful facilities for producing chickens and eggs, there is not a poultry journal at the present time in the whole State of Florida. If I am making a mistake I hope somebody will make haste to set me right. Furthermore, there is not a single person, so far as I can learn, who advertises baby chicks for sale. Mr. John H. Draime, of Monticello, Fla., has just written me, inquiring where he can purchase baby chicks, and some parties have to my knowledge sent away up here to the cold bleak North, and let the baby chicks take a journey of two or three days, and may be four, without a scrap to eat or a drop of water to drink. Yes, they get through alive, but it is positively "cruelty to animals."

When I first introduced Grand Rapids lettuce grown in Grand Rapids, Mich., they were growing lettuce in the greenhouses away up there in the North and shipping it down to Cincinnati, and it seems to me somebody said they had sent this lettuce clear down to New Orleans. Did you ever? Up in wide-awake and progressive Michigan they build expensive glass structures so as to keep out the zero weather, and then ship their produce down to the southern cities, where no frost ever hinders the raising of *any thing*. Now, who is there in that great and beautiful State of Florida who will go into the baby-chick business and take care of it? Of course, it takes time to build up a trade. Somebody who has already a reputation for fair dealing in poultry will be the one to undertake it. We learn by the *Petaluma Weekly* that the baby-chick business has assumed such dimensions in California that every one who undertook it last year was literally swamped with orders. I presume they are just now doing a big business in that line, and there is no reason in the world why Florida should not be doing the same.

Now wake up, you "chicken chaps," down in that beautiful climate, and let the world know the possibilities of the Florida climate. Why, only a little time ago somebody told me that in the city of Tampa they had to send away up to *Georgia* for "spring chickens." The chicken-men around in that region could not raise them fast enough to supply the market. By the way, prices for both eggs and chickens are usually as high there (or *higher*) as in the frosty North.

#### OATS (WITHOUT "SPROUTING") FOR LAYING HENS; IMPORTANT TESTIMONY.

Mr. A. I. Root.—I have read your writings for many years with pleasure, and (I trust) some profit. While not a professional poultryman, I derive some profit from a bunch of fowls. You seem to be getting on the right track in regard to the hopper-feeding plan, July 1. My best results in hopper feeding have been secured by feeding oats alone, and, during cold weather, while the fowls were confined, giving all the rock crystal grit they wanted. In the winter of 1907 I had 52 Rose Comb Rhode Island Reds, June pullets, on a diet of oats alone. They laid 98 dozen eggs in February, 1899; 10 in March, 1897; 3 in April, confined in a 12 x 20 building. In 1908 I had no oats to spare, so I

bought mixed grains and a bone-cutter, and did a lot of work and got far less results. In feeding the oats alone, the fowls never fill their crop full; but they also seldom pass the feeder, but stop and pick once or twice, and go on. I never soaked any oats for them, but kept clean water before them all the time, and let them do their own soaking. If I were going to feed any corn or wheat with the oats I would not mix them in a feeder, but fill the feeder with oats, and give the wheat or corn at night alone. If it is mixed with oats the fowls will sort most of it out and not eat oats enough. Oats seem to contain about the right elements, and in about the right proportion, to make a full feed for any animal, from a hen to a man. I give you this for what you may be able to get out of it. I like to get a lot of ideas, and sort them over in my mind.

J. A. CRANE.

Marion, N. Y., Aug. 2.

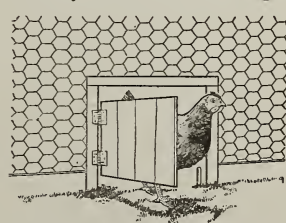
It would seem that not only sprouted oats but oats without sprouting are a good feed for laying hens, and I have been feeding them off and on for some time past by simply soaking them over night instead of sprouting them; but the above suggests a plan that is still less trouble. As we have an automatic watering-device I think I will go at once and put a pail of oats right beside the place where the fowls drink; then they can do their own soaking. One thing that troubles me about feeding oats is that the hens pull them over and scatter so much of the feed over the ground without eating it at all. These oats that they discard have either no grain inside or else a very small one. When they are forced to it, they will sort out these poor or imperfect grains; but if fed in a hopper where they can help themselves it seems they waste a great lot of it. If I understand you, you would give them oats only, in a hopper; and with this feed a quantity of corn and wheat, say once a day or oftener.

#### THE BEE-ESCAPE FOR CHICKENS—MORE ABOUT IT.

Although my picture on page 423, Aug. 1, illustrates about the simplest "escape" that can be made, I am glad to notice that several periodicals have taken the matter up. The publishers of *Suburban Life* for June had a very pretty illustration of the whole matter, and they have been kind enough to let me have the cut for the benefit of our readers, as below.

##### THE HEN'S GATE.

Hens get out of the hen-yard one way or another, but they seldom are able to get back into the yard.



They will walk along the fence pecking it with their bill. Having seen my hens do this for some time, I built a little gate which opened in and which was not hung quite plumb, so that its own weight would close it without the use of a spring. It was 8 x 12 inches, just

big enough for a hen to go through comfortably, and still not so heavy but that, when the hen picks it with her bill, it will swing open a little. She immediately pokes her head through, and the weight of her body opens the gate enough to allow her to pass through.

P. M. J.

Remember that all these devices can be used to permit the laying hen to go in on her nest; and after she has laid an egg it can be

arranged so she will go out into a separate yard, thus having all your layers at night by themselves. Leg-bands of different colors have been suggested in order that we may give each hen credit without being obliged to catch her so as to read the number on her leg-band. Weeding out the drones and keeping only the good layers is going to be one of the greatest strides in making poultry for eggs a success.

#### "THE MILLER SYSTEM OF POULTRY CULTURE."

In *Poultry Culture Monthly* (published in Syracuse, N.Y. ("and read everywhere")), almost the first reading-article we find is a description of the Miller system as above. We are told that a "special representative" had heard so much of this "system" that he made a visit to the place, and he takes two pages to describe what he saw and was told. This article is continued on two more pages in the advertising part of the journal. The last thing on the outside cover is the following in the form of an advertisement:

A good living for every man, woman, and child; the secret of proper breeding; the key to success in the poultry business finally solved by the Miller System. Is it worth your while to learn how to make \$3000 a year from each 25 hens? Is it?

Send a post card to-day for a copy of "The Why and How of the Miller System and Its Guarantees"—a free book of 11,809 words and 56 pages. Show the guarantee to your lawyer. Test the system far enough to form an opinion. If not satisfied (you will be) notify us within 30 days and we will send postage for return. If satisfied you are to keep it, and by keeping it you indicate your intention to be in the market for Miller System supplies—which include the Miller System non-clogging hygienic non-wasting hopper; the Miller System automatic convertible nest; the Miller System automatic combustion brooder; the Miller System poultry food; the Miller System books—Volume I., containing plans and directions for making all our devices, coops, watering system, etc., and operating the plant; Volume II., "Diseases and Remedies;" Volume III., "Poultry Encyclopedia of Systems, Secrets, and Facts." Each book 50 cents; all three with *Poultry Monthly*, the "Miller System Official Organ," for one year, \$1.25.

References—First National Bank, Binghamton, N.Y.; Walter R. Miller & Co., Binghamton, N.Y.; *Poultry Success*, Binghamton, N.Y.; *Poultry Monthly*, Syracuse, and others on request. Address

THE MILLER SYSTEM, Binghamton, N. Y.

The Philo system promised great things; the Briggs system and the Grundy system also made extravagant claims; but \$3000 in one year from 25 hens rather takes the cake—don't you think so? Just as soon as I saw the above advertisement I sent the money for the three books; and although this was over two weeks ago, all I have received at the present time is an advertising pamphlet entitled "The Why and How of the Miller System and Its Guarantees." One thing that particularly attracted my attention in this advertisement is an apparatus and a sort of fuel that will warm a brooder at an expense of "one-fourth of a cent a month." When that gasoline-lamp was advertised in our columns, to light up a big room for two cents a week, I thought it was rather cheap illumination; but one-fourth of a cent a month, and the fuel needs to be replenished only once in two months—why, it almost takes one's breath away. They advertise a lot of other wonderful things, and I propose to give them the full benefit of our columns.

If all they offer comes up to their claims they certainly will be glad of the free advertising I have given them; but if their things do not prove as represented, the great poultry family of the United States ought to "be glad" for my prompt warning.

On page 31 of the advertising pamphlet is the following:

At the present time this system enables any man or woman to net \$3000 a year from the scientific care of 25 hens.

Whew! what a wonderful blessing this will be to several million men and women! Just think of it—a net income of \$3000 with only 25 hens to start with!

I almost forgot to say that I have written to the "Miller System," and also to the editor of *Poultry Culture Monthly*. The editor of the latter replies that the Miller folks are so crowded with orders that they are away behind with their book; not a word, however, from the people to whom I sent the money.

#### CRIMSON CLOVER FOR CHICKENS; FIRELESS BROODERS, ETC.

Mr. Root:—I have been an interested reader of your columns for several years, and particularly of your disclosures of poultry secrets. Such advertisements will not down as long as the poultry world is flooded with a lot of advertising mediums calling themselves *poultry journals*. But that is not what I wished to tell you. The best green food for chickens in winter is a patch of crimson clover. Every one having a garden can sow crimson-clover seed after the vegetables are removed, and they can either pull the clover or let the chickens at it for a few hours each day. It will do the chickens good and the garden more good, and the cost would be only \$2.00 for the winter—that is, half a bushel of seed.

I had remarkable success with the fireless brooders this season, using them in the small Philo coops, which I moved to fresh grass every two days. For the first ten days I use a Root hot-water brooder where the chicks get heat and fresh air, and have no trouble with them after they graduate from that; but using the fireless from the start demands too close attention. I am also looking after 40 colonies of bees.

Keswick, Va., Oct. 21.

B. S. HORNE.

## HIGH-PRESSURE GARDENING

By A. I. Root

#### "PLANT CATALPA-TREES FOR PROFIT."

The above is the title of a very pretty little pamphlet sent out by Mr. C. E. Rogers, of Mechanicsburg, Ohio. Mr. Rogers has 150 acres planted to catalpas. I believe he grows them mostly for telephone-poles; and this pamphlet contains pictures of trees planted only three years ago that look as if they were almost large enough for telephone-poles already. The catalpa is not only one of the most rapid-growing trees known, but the timber is hard enough to make ax-helves, and we are told fence-posts are now in use that have done good service for 85 years, and are still sound. One reason why you should have this booklet is that traveling salesmen have sold a worthless variety of catalpa to farmers all over the land. Mr. Rogers, when he first commenced, got swindled in this way to the extent of 2000 trees. After four years of fussing with them he dug



up the whole lot and threw them away. Our Ohio Experiment Station at Wooster has been for some years testing the catalpa, and they thoroughly indorse all that Mr. Rogers says about the *Catalpa speciosa*. If I am correct he furnishes seeds and little plants of the right kind for timber. It is worth something to look at the pictures of the enormous growth that the trees have made. Of course, he has some good land for the purpose. Growing trees to take the place of our depleted forests is an industry that is already close upon us; and Mr. Rogers has demonstrated that more money can be made in growing these trees than in growing an average farm crop.

Below is a letter evidently not intended for print; but I think I shall aid in a good cause by giving it a place right here:

Mr. Root:—I am not going to let you forget about my catalpa-trees, and trust that what I have written may induce you to start in the good work of planting trees.

It is of great importance that land-owners see the need of planting trees, and the sure profit to come from this work. The Ohio Experiment Station, at Wooster, has done a great work through its experimental planting of catalpas in nearly every county of the State, and, by their measurements in some of the older groves, showing the great profit to be derived from intelligent tree-planting.

My 25-acre field of catalpas that were planted in the spring of 1906 now has some trees large enough to make ax-handles. Catalpa wood makes a better ax-handle than hickory; and as hickory fit for ax-handle stuff is getting to be very scarce, a chance to make big profit from catalpas in a few years presents itself.

My own fields of catalpa-trees are making a splendid growth; but a Mr. Hatfield, living about five miles from me, has half an acre of catalpas that are just a little better than any I have ever grown. This shows that I have no patent right on the growing of these trees. Start a grove of catalpas this year and you will be more than pleased with the result.

Mechanicsburg, Ohio.

H. C. ROGERS.

#### WONDERBERRY — STILL MORE ABOUT IT.

On page 519 you have stated that if any of your readers have grown the celebrated wonderberries, and find that they do really come up to the strong claims made for them, you would be glad to hear from them.

As to coming up to the claims made for them, I can't say, as I do not recall the exact claims made; but I have no doubt they come as near the claims made for them as do some of the articles advertised in your paper. I notice articles advertised in your paper as "the best," "ours can not be excelled," "the very best," "the finest," etc. Do you not think those are pretty strong claims, Bro. Root? I admit the claims made are possible but not probable. So it may be with the wonderberry.

I have been fortunate enough to read a number of statements made by the *Rural New-Yorker*, and republished by the *Literary Digest* two weeks ago, also an editorial in the *Indianapolis Star* and *Indiana Farmer* on the wonderberry.

I have eight plants of the famous wonderberry grown from the seed by my mother, and raised from small plants by myself. The plants now will average at least 4 feet across; and, if spread out, would measure 6 feet across—that is, part of them would. Some are not as large as others. When the first berries ripened I thought of what I had read, that they were just plain nightshade. I tried them, and they didn't taste bad. Then I ate one and felt no worse, then I ate more, and still no bad effects. So we (or, rather, the other half of the firm) made a pie, and we didn't eat a piece—we just ate the whole pie, and we've been eating wonderberry pie ever since, just as often as we could get it, and we have had wonderberry sauce, and it gives the same results.

I'll not say that they are the best that ever was, but I will say that I never ate anything in pies or sauce that tasted any better. The berries are small, about the size of a good plump wild cherry, and grow in clusters of usually four or six berries to a cluster; and such a profusion of berries as grow on the wonderberry bush, one doesn't often see. I am confident that the bushes I have will average during the season almost a gallon of berries to the bush.

So much for the wonderberry. The nightshade, the *Rural New-Yorker* calls it, if it is a new creation, we have Burbank to thank for it. If it is merely the nightshade we have Burbank to thank for the knowledge that it is not poisonous, but deliciously palatable. I am fully convinced that if any one will give the wonderberry a thorough test he will be perfectly satisfied that it comes as near the claims made for it as most articles that are advertised. Some people could not raise weeds if they tried; and judging from the looks of the illustration of the wonderberry-plant in the *Literary Digest*, which, as I understand, was taken from the *Rural New-Yorker*, that must be the trouble with the person who raised the plant that was illustrated in that paper.

E. J. SPAUGH.

Burney, Ind., Aug. 21.

Friend S., I heartily agree with what you say in regard to advertising one's goods as "the best in the world," etc. I think it is bad taste, and that it really does not recommend the article to the general reader. I do not know how many incubator establishments there are that claim to be the "biggest in the world;" and may be one of them is truthful, but they can not all be.

In regard to the wonderberry, I am glad to get evidence that it is really of some value; but I do not see how we can excuse either Childs or Burbank for coming out before the world with such tremendous claims that the berry is a "new creation" right from the hand of Burbank, who has been paraded for some time past as the "wizard of horticulture." Burbank did not create it, for the plant was already known as the garden huckleberry, and the wild nightshade of the woods. We are glad, of course, to know that the wild nightshade is really good and wholesome food when cooked. So far, good has been the outcome of this wonderful stir about the wonderberry; but as the *Sunday School Times* has said so forcibly, "deception is always wrong;" and we do not need the *Sunday School Times* to prove that falsehood is always wrong.

## TEMPERANCE.

### THE WAY THE TEMPERANCE WORK GOES "MARCHING ON."

I wonder if it has ever occurred to the liquor periodicals that they are unwittingly, now and then, giving us some splendid help in our crusade. Along this line the *Home Herald* has the following:

#### GOOD NEWS FROM THE ENEMY.

The following is from Bonfort's *Wine and Spirit Circular*:

"With the loss of Tennessee we can now foot up six States that have outlawed our business during the past fifteen or eighteen months—the other States being Oklahoma, Georgia, Alabama, Mississippi, and North Carolina; and we have prohibition contests facing us in Arkansas, Texas, West Virginia, and perhaps in Kentucky.

"In Ohio some sixty-one counties have voted prohibition since September 1, 1908, and all counties in Indiana that have voted under the county unit law have gone against the saloon by large majorities. There is grave danger of Ohio, Indiana, and Michigan being lost entirely, and there certainly is danger, and grave danger, that West Virginia, Virginia, Arkansas, and Texas will go the same way.

"The saloon business in this country is doomed unless the laws are so altered as to rid the trade of the disreputable element, and insure that it will be conducted in the future with decency and with entire regard for the expressed wishes of the people."

Inasmuch as a saloon, in the nature of the case, can not be conducted with "decency," we see no prospect for the future of the saloon except to be "doomed." Meanwhile, the "expressed wishes of the people" are helping doom many saloons at every election.

Observe also that Governor Stubbs, of Kansas, has given notice that men who drink intoxicating liquors need not apply for any appointive office in the State as long as he is the executive officer. The governor has issued orders to subordinate officers at the head of the various departments of the State government, so says a press dispatch from Topeka, which reads, "Discharge all drinking men. Employ only temperate men who will give a dollar's worth of work for every dollar received as salary from the State."

Other governors are invited to copy this example.

May God be praised for such a man as Secretary Wilson. Long may he be spared to fill his important office. Here is what *he* says:

Secretary of Agriculture Wilson says if every distillery and brewery in the country were to close its doors, the American farmers as a class wouldn't know it so far as the effect would show itself on the markets for grain.

After the article on p. 714 ("Does a Cigar Indicate the Gentleman?") was put in type I found the following in *Good Health* for November:

According to the *Baltimore Herald*, about twenty per cent of the young men who recently applied to the Naval Academy were rejected because the physical tests showed weakness of the heart or irregular beating of the heart, due to the use of tobacco.

It is a good thing that this fact is published to the world. Smokers whose brains and minds are not too much clouded by the filthy weed to be able to read between the lines of the above statement will see at once that there are other circumstances in life which demand a good physique and a strong heart besides an examination for admission to a naval academy. When one out of five of the applicants for admission to a naval academy is found to be defective because of the use of tobacco, it is evident that this weed must be doing a vast amount of injury. It is so well known that a man must be physically sound to obtain admission at Annapolis that only those who consider themselves in fine health and able to endure the severest tests consider it worth while to apply. What, then, must be the condition of a large proportion of the rest of the young-men smokers of the United States?

And what about the men who are no longer young, who have been smoking for years and years, whose livers, hearts, and kidneys are getting old through the ordinary wear and tear of advancing age, and have in addition been bearing a heavy load because of the constant saturation of the body fluids with one of the most deadly of poisons? The tobacco evil is gigantic in its character. The mischiefs produced by the continuous use of this poisonous weed are beyond estimate. The worst effects do not appear in early life, but show up most prominently when the age of physical decline arrives.

There is a greater demand just now than ever before since the world began for capable men to direct our great undertakings and feats of engineering that are going on in the world, and big salaries are paid. Why, in one instance I knew of one man being paid \$100 just to visit a certain establishment and give them the benefit of his wisdom and experience—for only *one day*, mind you. Now, is the use of tobacco a help or a hindrance in fitting young men for such positions? What does the Naval Academy think of it?

In the construction of a great building not a thousand miles from where I now sit writing, a man *under the influence of intoxicating liquor* came, one morning, to direct a large crowd of workmen. I think it is pretty generally agreed that the use of tobacco is only a stepping-stone to just such work.

## HOW ONE GOOD WOMAN, ALMOST SINGLE-HANDED, MADE A TOWN DRY.

*Mr. A. I. Root:*—I am always interested in your talks in Our Homes, particularly on the liquor question. I have just finished reading your article in the issue for Oct. 15, and was much pleased with it. I am trying to bring my one boy up in a proper way, and I agree with you that self-reliance is cultivated by the overcoming of obstacles. I have been thinking many times of writing to you about a remarkable woman who lives in a near town, and telling you about a plan that she worked up to drive a saloon out—one that, if followed everywhere by determined women, would solve the saloon question in many places.

Your remarks about the adoption of children also brings this woman to my mind. She is now well along in years, but has never had any children of her own. In spite of this she has adopted and brought up 21 children. Most of these are well married, and have homes of their own. In addition to this she has given a home, until their death, to three helpless old men. What I wished to tell you about, however, was the saloon incident. There had never been a saloon in her little town; and when one began to be talked of she objected. Among others, she talked to the man who was starting the saloon. He assured her "that it would be all right," "a perfectly orderly place," etc. In her reply she said, "Do you mean to say that this saloon will be conducted so that any one could come to it?"

"Yes."  
"Will it be conducted so properly that even a woman could come?"

"Yes."  
"I could come, could I?"  
"Yes."

Of course, the saloon man had no idea that any woman *would* come; but this woman was of the right metal. She went among her friends, made her plans, and when the saloon opened she went with one other woman to the saloon. They carried light chairs and some sewing and spent the afternoon in the saloon. Men would push the door open, give a hasty look, and vanish, without the drink. (Imagine a man's feelings, going to get his "poison," and finding his wife waiting for him!) Of course, a woman has just as much right in a saloon as a man. Day after day the women of the town, in relays, picketed the saloon with their sewing or knitting—result, no patronage, and the saloon shut its doors, and to this day the town has had no saloon.

I have never heard of this means being taken before; but if it was effective in this instance I felt that you would be amused and interested in hearing of this way of fighting the saloon. I wish to thank you for all you write from month to month; and I hope you may live long, and continue to give us of the good thoughts of your mind.

C. A. BRIGGS.  
Hood River, Oregon, Oct. 22.

Many thanks, dear friend B., for the incident. It almost seems as if we ought to have the woman's name; but perhaps she might object. But one thing is certain: When she comes to finish her work here on earth she will be sure to hear the welcome words of the Savior, "Well done, thou good and faithful servant; enter thou into the joy of thy Lord."

In regard to this woman's manner of proceeding, something the same thing was done in Oberlin, O., a few years ago. But it was a regular "fight," and lasted a long time; and the saloonist, or, rather, the druggist, did not get whipped out entirely after all. The good woman you mentioned made a great point for victory in getting *permission* to go into the saloon at the outset. In this way she had the proprietor in a corner, for he could not well go back on his own agreement.

While on the temperance question you may be glad to see this report from Florida:

Well, Mr. Root, Clay Co., our sister county, went dry by 153 majority last week. Perhaps you have already seen an account of it.

Lake Butler, Fla., Nov. 1.

CHAS. H. REGISTER.





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It costs us an extra \$1,000,000  
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Rubber Footwear supreme in  
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through a multitude of intricate processes.

It requires a knowledge of rubber that can be gained only by years of practical expe-  
rience. It calls for immense factory facilities, and a well-trained army of workers.

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secret of "Ball-Band" success—a business approaching \$10,000,000 a year, built on the bed-  
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We could not make it better if we got double its present price. Yet your dealer asks about  
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should be careful to look for the little Red Ball which we place on every pair of our Rub-  
bers and arctics. It's there for **your protection**. An abso-  
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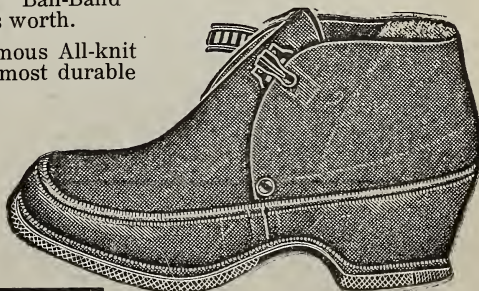
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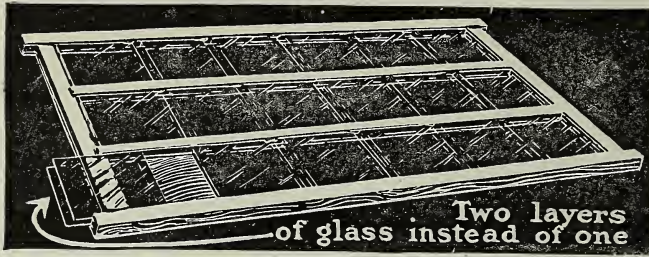
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**Mishawaka, Indiana**

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Sunlight Double Glass Sash increases the size, quality, and rapidity of growth of your plants. The two layers of glass have a  $\frac{5}{8}$ -inch cushion of air between them, forming a perfect non-conductor, retaining the heat in the bed over night.

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**SUNNY FLORIDA**  
*The Land of Plenty*

One Grove of Grapefruit  
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Vegetables often net \$1,000 per acre most.

Resolve to-day to farm where farming nets most.

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Butter and  
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Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten styles. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Booklet Free.

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Lighted instantly. Over 200 styles. Agents wanted. Write for catalog  
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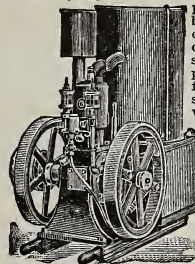
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You can't run a farm engine profitably on gasoline much longer. Price of gasoline going sky high. Oil Companies have sounded the warning. Kerosene is the future fuel and is now 6c to 10c a gallon cheaper than gasoline. The Amazing "Detroit" is the only engine that uses common lamp Kerosene (coal oil)



perfectly. Runs on gasoline, too, better than any other. Basic patent. Only 3 moving parts. Comes complete ready to run. We will send a "Detroit" on free trial to prove all claims. Runs all kinds of farm machinery, pumps, saw rigs, separators, churns, feed grinders, washing machines, Silo fillers and electric lights. Money back and freight paid both ways if it does not meet every claim that we have made for it. Don't buy till you get our free catalog. 2 to 24 h. p. in stock. Prices \$29.50 up. Special demonstrator agency price on first outfit sold in each community. 2000 satisfied users. We have a stack of testimonials. Write quick. (20)

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Detroit Engine Works, 373 Bellevue Ave., Detroit, Mich.

## A WONDERFUL INVENTION

**CLARK'S DOUBLE ACTION COMBINED CULTIVATOR AND HARROW** can be used to cultivate crops in rows, as a Listing Harrow, and when closed together is a Disk Harrow cutting 4 1/2 feet wide. Drawn by two medium horses. Jointed pole. Perfect centre draft. A labor saver. Send today for FREE Booklet. CUTAWAY HARROW CO., 930 Main St., Hingham, Ct.

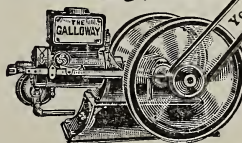


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**25 YEARS' PRACTICE.**

CHARLES J. WILLIAMSON,  
Second Nat'l Bank Bldg., WASHINGTON, D. C.  
Patent Practice in Patent Office and Courts. Patent Counsel of The A. I. Root Co.

## GET EGGS NOW

Humphrey's newest book, "The Golden Egg," will show you how to get eggs all winter, and from 150 to 250 eggs a hen a year. I will give you, ETC., my secret of reducing feeding cost one half and of doubling your poultry income.

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Where Humphrey's Bone Cutters, Clover Cutters, Brooders and other Poultry Helps are made.

## 15 Cents a Rod

For a 22-inch Hog Fence; 16¢ for 26-inch; 19¢ for 31-inch; 23 1/2¢ for 34-inch; 27¢ for a 47-inch Form Fence. 50-inch Poultry Fence 37¢. Lowest prices ever made. Sold on 30 days trial. Catalog free. Write for it today.

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**4000 FERRETS.** Some trained. They hunt rats and rabbits. Price list and book mailed free.  
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# BEESWAX WANTED

WE are always in the market for beeswax, and will pay the best market price. We used last year in the manufacture of **Comb Foundation** over

## EIGHTY TONS

and are likely to need fully as much for this year's trade. Send your wax direct to us, being sure to pack it carefully for safe shipment, and mark it so we can easily tell who sends it. Write to us, at the same time sending a shipping receipt, and stating weight of shipment, both gross and net.

We are paying at this date for pure average beeswax delivered here, 28 cents per pound cash, or 30 cents in trade. On choice yellow wax we pay a premium of one to two cents a pound.

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## 90% Hatches

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and Brooders are non-moisture; self-regulating; self-ventilating. Write for 160-page Catalog. Address Nearest City.

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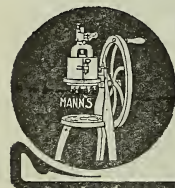
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You can double your egg yield by feeding fresh-cut raw bone. It contains over four times as much egg-making material as grain, and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

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**C**ONTINUAL growth, hard work, and constant digging after business, forces us to secure larger quarters. We have disposed of our present place of business at 1322 South Flores Street, where we had a building 40×250, and which was not nearly large enough for us, and we found it necessary to put up a building just twice the size of our present one. We have let the contract for our new building, in which we shall have 20,000 square feet of floor space, and shall be in position to carry a larger and more complete stock of Root's Goods than ever before. Our foundation-factory will also be rebuilt and placed on our new site, and will be built better and more complete than ever before. We are glad to state that now we are on the Southern Pacific Railroad, which has built a track right along where our new building is going up, which reaches nearly every point to which we ship. Heretofore we were very much handicapped, and many shipments were delayed because we were on a road which could not handle our shipments promptly. We can now concentrate honey shipments, make good time, and give the very best service to our customers that can be had. Our customers who heretofore called at 1322 So. Flores St., can in the future obtain goods and information, and sell their wax, at our branch, 607 South Flores Street. We have a number of customers south from San Antonio who bring honey in wagons; such customers, as a matter of convenience to them, can deal with our branch, 607 South Flores Street, where they will receive the same prompt attention as they did at 1322 South Flores. Our friends who visit the city, and who find it inconvenient to go so far out as 1322, can easily call on us at 607 South Flores, as this is only two blocks from the county courthouse, and located directly opposite the United States Arsenal, on South Flores Street. If you wish to pay us a call at our new warehouse or general office, you can reach us by taking the Nolan Street car, getting off at the subway, corner of Nolan and Cherry Streets. Our office fronts Nolan Street, right where the car stops. Now, since we have gone to such heavy expense and so much enlarged our business, we sincerely hope that we shall be in position to please our friends and customers so well that they will induce their neighbors to trade with us in the future. We are the only firm in the South that keeps such an immense stock always on hand ready for prompt shipment, and fill our customers' orders promptly when goods are needed most, and for that reason we are entitled to all the trade that can be given us.

Thanking all of our friends who helped to build us up by favoring us with their patronage, and wishing all of our brother and sister bee-keepers much success and happiness, we remain

Yours very truly,  
San Antonio, Texas..

UDO TOEPPERWEIN,  
W. M. MAYFIELD.



## Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the classified columns or we will not be responsible for errors.

### Honey and Wax for Sale

FOR SALE.—New alfalfa honey, best quality, new cans and cases, 7½c. H. E. CROWTHER, Parma, Idaho.

HONEY-BROKERS.—We offer a car of water-white sage at 6½ cts.; car lot of amber at 5½ cts. per lb. FREEMAN & FAIRCHILD, Redlands, Cal.

FOR SALE.—Well-ripened clover or basswood honey in 160-lb kegs at 8 cts. per lb. f. o. b. here. N. L. STEVENS, Moravia, N. Y.

FOR SALE.—Clover and basswood honey in 60-pound cans. Write for particulars. MRS. C. L. PARKER, Onondaga, N. Y.

FOR SALE.—Clover, basswood, and amber honey in 60-lb. cans. C. J. BALDRIDGE, Kendaia, N. Y. Homestead Farm.

FOR SALE.—Honey in 160-lb. kegs and new 60-lb. cans. Buckwheat and light amber, 7½; clover, 8 to 8½. C. B. HOWARD, Romulus, N. Y.

FOR SALE.—Honey. Just unloaded our third car of water-white sage. We offer this in crates of two 60-lb. cans at 9 cts. per lb., f. o. b. Toledo. GRIGGS BRO'S CO., Toledo, O.

FOR SALE.—Clover and raspberry honey mixed in new 60-lb. cans. Well ripened and of fine flavor. Sample, 10 cts. Price of sample may be deducted from order. JAMES MCNEILL, Hudson, N. Y.

HONEY FOR SALE by members of the Michigan Beekeepers' Association. For free annual booklet giving names and addresses of members address the Secretary, E. B. TYRREL, 230 Woodland Ave., Detroit, Mich.

FOR SALE.—Extracted honey, tupelo, 8½ cts. per lb.; light amber, 8½; sage, 9; all in 120-lb. cases; quantities less; samples, 10 cents. I. J. STRINGHAM, 105 Park Place, New York City.

FOR SALE.—Amber and buckwheat comb honey at \$2.75 per case in six-case lots; 25 cases at \$2.60; 50 cases at \$2.50 per case, 24 sections to case; 500 unfinished sections at \$8.00 per 100.

QUIRIN-THE-QUEEN-BREEDER, Bellevue, Ohio.

FOR SALE.—Fancy extracted alfalfa and basswood honey, \$5.50 per 60-lb. can; \$10.75 per case of two 60-lb. cans; \$10.00 per case in quantities of 10 cases or more. ROBT A. HOLEKAMP & SON, 4263 Virginia Ave., St. Louis, Mo.

FOR SALE.—My new crop white-clover and basswood extracted honey, put up in brand-new 60-lb. cans; two cans to a case, at 8½ cts. per lb. by case of 120 lbs., or 9 cts. per lb. for single 60-lb. can; 8½ cts. per lb. for five-case orders or more, F. O. B. Flint; cash with order. LEONARD S. GRIGGS, 711 Avon St., Flint, Mich.

FOR SALE.—Our crop of clover comb honey in 4 x 5 plain sections; also extracted of the following kinds: Clover, raspberry, basswood, and buckwheat. Not a pound of the above honey was extracted until after the close of the honey-flow. The fact is, there is none better on the market. State which kind you prefer, and the amount you can use, and we will quote you our lowest cash price and mail you a liberal sample. Remember we are specialists, and understand thoroughly the production of extracted honey. E. D. TOWNSEND & SONS, Remus, Mich.

RASPBERRY-BUCKWHEAT.—Early-blossoming buckwheat near one of our Northern-Michigan apiaries gave to the raspberry honey something of a buckwheat color and flavor—enough so that it can't be sold as pure raspberry honey. It is put up in new 60-pound cans, and offered at 8 cents a pound—\$4.80 for a can. Send 10 cents for a sample, and the 10 cts. may apply on an order if you send one.

W. Z. HUTCHINSON, Flint, Mich.

### Honey and Wax Wanted

WANTED.—Choice white extracted honey. Prompt payment on receipt. H. C. AHLERS, West Bend, Wis.

WANTED.—White-clover comb and extracted honey. See adv't in October issues. B. WALKER, Clyde, Ill.

WANTED.—All grades of comb and extracted honey; can use 2000 cases of buckwheat comb at once. Let us hear from you. GRIGGS BRO'S CO., Toledo, O.

WANTED.—Comb and extracted honey. State quantity, kind, how put up, and lowest cash price you will take. E. R. PAHL & CO., Milwaukee, Wis.

WANTED.—Comb, extracted honey, and beeswax. State price, kind, and quantity. R. A. BURNETT, 199 South Water St., Chicago, Ill.

WANTED.—White honey. State kind, how put up, and lowest cash price. CHAS. KOEPFEN, 1508 Main St., Fredericksburg, Va.

I will pay 7½ cts. per lb. for gilt-edged white-clover extracted honey laid down; also ½ ct. more per lb. for white-clover comb honey than other responsible parties will offer who will buy all grades put up in light rough boxes. B. WALKER, Clyde, Ill.

### Wants and Exchanges

WANTED.—A foot-power saw. State condition and price. GILBERT BILLINGS, Housatonic, Mass.

WANTED.—White mice; state number and price. J. M. SIMPSON, Colwyn, Pa.

WANTED.—Raw furs, for which I will pay the highest market price. Send for price list to WM. CRAIG, Postmaster, Luce, Mich.

WANTED.—Refuse from the wax-extractor, or slumgum. State quantity and price. OREL L. HERSHISER, 301 Huntington Ave., Buffalo, N. Y.

WANTED.—By you—best goods most promptly; in other words, "Pierce service, Root quality." I buy by carloads, and can supply you at once from one of the best shipping centers in the country. EDMUND W. PEIRCE, Zanesville, O.

### Situation Wanted

WANTED.—An experienced poultry-woman of 31 desires a position on a poultry-farm or as a compositor in town. Address Box 172, Royalton, Minn.

### Poultry

A. I. Root's Bee-goods, Poultry-supplies, Seeds, etc. STAPLER'S, 412-414 Ferry St., Pittsburgh, Pa.

FOR SALE.—Chicks, 8 cents each; eggs, \$4.00 per 100; shipped anywhere. CULVER POULTRY FARM, 4086 Main St., Benson, Neb.

FOR SALE.—Largest Bronze turkeys in State. Order now for spring eggs. Write for particulars. E. BRADLEY, Trenton, Ky.

## Bees and Queens

FOR SALE.—Golden-all-over queens, and bee-keepers' supplies. T. L. McMURRAY, Silverton, W. Va.

First prizes Connecticut State Fair for Italian bees and queens, 1909. A. W. YATES, Hartford, Ct.

Extra-fine queens of the red-clover strain, bred by the originator. Fine queens for breeders' use, a specialty. F. J. WARDELL, Uhrichsville, Ohio.

FOR SALE.—225 colonies of bees; first-class condition; cheap, in lots to suit. O. A. KEENE, Topeka, Kansas.

FOR SALE.—500 colonies of bees on standard frames, all straight comb. W. J. STAHMANN, De Vall's Bluff, Ark.

FOR SALE.—Bees at a bargain. Over 100 stands in good condition near Kansas City, Mo. No honey-dew. For description write to W. M. MAYHEW, Canon City, Col.

FOR SALE.—1000 colonies of bees with fixtures; run principally for extracted honey. DR. GEO. D. MITCHELL & Co., 340 Fourth Street, Ogden, Utah.

FOR SALE.—175 swarms of bees at a bargain if taken soon; 8 and 10 frame 2-story hives with Hoffman frames, built from wired foundation. If interested call on or write. W. H. RAILS, Orange, California.

FOR SALE.—Moore's strain and golden Italian queens, untested, \$1.00; six, \$5.00; twelve, \$9.00. Carniolan, Bannat, and Caucasian queens, select, \$1.25; six, \$6.00; twelve, \$10.00. Tested, any kind, \$1.50; six, \$8.00. Choice breeders, \$3.00. Circular free. W. H. RAILS, Orange, Cal.

FOR SALE.—140 colonies of bees in eight-frame hives for comb honey; also 55 empty hives, most of them new, with 500 comb-honey supers, a lot of foundation, and sections and other bee-supplies. I am close to the Nevada State line. No foul brood in this valley. Address H. CHRISTENSEN, Coleville, Mono Co., Cal.

FOR SALE.—180 stands of bees, 2 extractors, tank, and tools; H. P. saw; vinegar; 2 horses; wagon, buggy, harness; 1 cow, 2 brood sows; chickens, incubator, tools; household goods; will figure up \$1060; price \$950, including 4 acres of hill land. Write for particulars. L. W. BLIZZARD, Box 57, Rural Route, National City, Cal.

## Real Estate

WANTED.—Farms and businesses. Don't pay commissions. We find you direct buyer. Write, describing property, naming lowest price. We help buyers locate desirable properties free. AMERICAN INVESTMENT ASSOCIATION, Minneapolis, Minnesota.

FOR SALE.—80 acres, all in cultivation or pasture; a good 7-room house, cellar, 2 cisterns and well; new barn, 40x50 ft.; granary, hog and chicken house, etc. Necessary fence, partly woven wire. All underlaid with a 7-ft. vein of coal. One mile from mine; two miles from a good town; 50 miles southeast of St. Louis; school 60 rods from house. A good honey trade and apiary go with the place, at \$50.00 per acre. For further particulars address WM. DARBY, Coulterville, Ill.

## Household

LADIES.—Let me tell you about our delicate, durable, fashionable bulk perfumes that cost less than you ever paid. Better still, send 25 cents for a large bottle of our triple extract "Household Brand" New Mown Hay, or "Household Brand" Violet. Money back if dissatisfied. THE HOUSEHOLD Co., Dept. P. Paterson, N. J.

## For Sale

FOR SALE.—Bee-supplies at factory prices. D. COOLEY, Kendall, Mich.

FOR SALE.—New unhulled white-sweet-clover seed, 15 cts. per lb.; postage, 8 cts. per lb. extra. ANTON G. ANDERSON, Holden, Mo.

FOR SALE.—On account of poor health, a manufacturing plant consisting of mill, lot, machinery, etc. Price \$2850. Address box 39,236, care GLEANINGS.

FOR SALE.—\$40.00 Victor talking-machine and forty records, slightly used. Bargain. W. A. NICHOLS, Medina, O.

FOR SALE.—1500 lbs. hulled yellow-sweet-clover seed—small lots, 15 cts. per lb.; 100 lbs., 13 cts.; postage extra. R. L. SNODGRASS, Rt. 4, Augusta, Kansas.

FOR SALE.—A full line of bee-keepers' supplies; also Italian bees and honey a specialty. Write for catalog and particulars. THE PENN CO., successors to W. P. Smith, Penn, Miss.

FOR SALE.—We have several hundred cases of good second-hand cans, two in a case, used only once with white honey; 10 cases or over, 40 cts.; 25 cases or over, 35 cts.; 100 cases or over, 30 cts., f. o. b. Toledo. Speak quick. THE GRIGGS BRO'S CO., 24 North Erie St., Toledo, Ohio.

## Announcements

I am out of sweet-clover seed, and unable to fill any more orders. WM. CRAIG, Luce, Mich.

## Bee-keepers' Directory

Bee-keepers' Supply Co., Lincoln, Neb. We buy car lots of Root's goods. Save freight. Write.

ITALIAN BEES, queens, honey, and Root's bee-keepers' supplies. ALISO APIARY, El Toro, Cal.

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortlandt St., New York City.

For bee-smoker and honey-knife circular send card to T. F. BINGHAM, Farwell, Mich.

Golden yellow Italian queens my specialty; 1909 price list ready. Safe introducing directions. E. E. LAWRENCE, Doniphan, Mo.

Golden and red-clover Italian queens. Greatly improved facilities for 1910. WM. A. SHUFF, 4426 Osage Ave., Philadelphia, Pa.

Italian queens from direct imported mothers, red-clover strain, \$1.00. Circular. A. W. YATES, 3 Chapman St., Hartford, Conn.

FOR SALE.—High-grade red-clover and Golden queens. Safe arrival and satisfaction guaranteed. One, 75 cts.; six, \$4.00; dozen, \$7.50. SIRES BROS. & Co., North Yakima, Wash.

QUEENS.—Improved red-clover Italians, bred for business—June 1 to Nov. 15, untested queens, 60 cts.; select, 75 cts.; tested, \$1.00 each. Safe arrival and satisfaction guaranteed. H. C. CLEMONS, Boyd, Ky.

Quirin's famous improved Italian queens ready in April; nuclei and colonies about May 1. My stock is northern bred, and hardy. Five yards wintered on summer stands without a single loss in 1908; 22 years a breeder. For sale, several tons of fall honey. QUIRIN-THE-QUEEN-BREEDER, Bellevue, O.



## SPECIAL NOTICES

BY OUR BUSINESS MANAGER

### SWEET-CLOVER SEED.

We want to hear from those who have sweet-clover seed in quantities for sale. We have not secured our usual supply, and are having a brisk demand, so are liable to run short before another season's crop can be gathered.

### JAPANESE BUCKWHEAT.

We have secured an extra-choice lot of Japanese buckwheat for seed; and rather than carry so much over for the spring trade we offer it for shipment now at a special low price. For prompt cash orders we will sell one bushel for \$1.15; 2 bushels, \$2.10; 10 bushels, \$10.00, bags included. If you can use 50 or 100 bushels, write for special price. Seed is re-cleaned, and 50 pounds to the bushel.

## Special Notices by A. I. Root

### THE STAINLESS FLAG.

We have about 150 copies left of this great temperance pamphlet. You can have them, while they last, by sending us a two-cent stamp for postage. About one copy to each applicant is about all we want to spare, however, under the circumstances.

### RADIUM AND THE ELECTRIC CLOCK.

"Radium still radiates," and the electric clock has now completed two full years on one set of three little dry batteries. Just think of it—a clock that keeps ticking, and keeps excellent time, for two full years without any winding, and, I was going to say, without a finger being touched to it! but once in quite a spell Mrs. Root has pushed the minute-hand forward a little. I suppose this clock might be regulated more exactly; but it is doing so well we do not like to meddle with it.

### "BUILT AND USED BY POULTRYMEN."

The above is the title of a beautiful book just chock full of pictures showing what successful poultrymen have now in actual use. There is a great lot about fireless brooders. Many styles are described and pictured; also various kinds of hot-air and hot-water brooders, and water-fountains and feeders galore. The book is gotten out by The Standard Co., Quincy, Ill. The only price I find on it is 75 cts., and this includes the *Standard Poultry Journal* one year. As the *Journal* is 50 cts., the book costs you only 25; and it is worth that, just to look at the pictures.

### "PROTECTION OF FRUIT-TREES FROM RODENTS."

The above is the title of Bulletin 208 from the Ohio Experiment Station, and a most useful and beautiful bulletin it is. It contains 20 pages full of accurate illustrations—one or more on each page. The damage to fruit-trees by different animals such as mice, woodchucks, rabbits, etc., by girdling them in the winter, is enormous; and this book gives some splendid illustrations of all the best methods known for combating these pests. Not only that, but the closing chapter tells us what to do when most people would consider a tree hopelessly ruined. We have now in our apple-orchard a McIntosh Red, that I think a lot of, that was saved by grafting some shoots both above and below the girdling. The tree would surely have died but for these grafts. Now, do not send to me for the bulletin. Send to the Ohio Experiment Station, Wooster, Ohio.

### TURKEYS AND THEIR MANAGEMENT.

The *Reliable Poultry Journal*, of Quincy, Ill., has just issued a big, bright, practical turkey-book. I have had my eye on the turkey business for quite a good while; but I have always been told that they do not thrive unless they can have unlimited liberty. This book, however, gives an account of one turkey-raiser who got some wild-turkey eggs and hatched out some turkeys from them. The only way, however, by which he could prevent them from flying away with other wild turkeys that frequently flew over his place was to put them in a yard 30 feet wide by 150 feet long, covered overhead with poultry-netting as well as having a six-foot fence. For a roosting-place he let his inclosure go up 30 feet high. He kept them successfully

in this pen, and obtained some wild males so as to get a cross with the best strain of tame turkeys.

Now, the only fault I find with this beautiful book—if, indeed, it is a fault—is that it does not give the *location* of the various turkey-growers who furnished the articles. The book is full of practical teachings, for it was written entirely by successful turkey-growers. The picture in the frontispiece is nice enough to hang up in the parlor. It represents in full colors a pair of Mammoth Bronze turkeys. This book is dated 1909, and the price is 75 cents postpaid. If I knew where the man lives who has the covered turkey-yard and wild turkeys I should like to go and visit him. Perhaps he kept his *residence* out of print for fear he might have too many visitors.

On the title-page we find the following:

A turkey boiled  
Is a turkey spoiled;  
A turkey roast  
Is a nation's boast;  
But for turkey braised,  
The Lord be praised.

I forgot to say that the principal objection to my growing turkeys is that, if they run loose, they will annoy my neighbors, and I should never want to do that. I have been trying for several years to coax Bro. Shumard to start a turkey-ranch on his island. As he is almost a mile from the main land, there would not be much danger of troubling the neighbors unless his stock should get crossed with the wild turkeys that are still found in that region.

## Convention Notices.

The next annual convention of the Colorado State Bee-keepers' Association will be held in the senate chamber, State capitol, Denver, Dec. 7 and 8. Program later. W. L. HENTHORNE, Sec.

The Northern Michigan Bee-keepers' Association will hold its next annual session at Mancelona, Mich., Dec. 1 and 2. We are holding this meeting at this time to get the attendance of those who can not get away during the busy month of April—the usual meeting month. A rousing meeting is expected. Come! East Jordan, Mich. IRA D. BARTLETT, Sec.

### THE CHICAGO-NORTHWESTERN CONVENTION.

The annual meeting of the Chicago-Northwestern Bee-keepers' Association will be held in the Briggs House, northeast corner of Fifth Ave. and Randolph St., Chicago, Wednesday and Thursday, Dec. 1 and 2. Judging from the letters received, this is going to be the largest and best convention held in America this year. The indications are that there will be more leading bee-keepers present than there were at the National convention at Sioux City in September. This meeting comes at a time when bee-keepers can more easily get away from home for a few days.

Among those who have written that they expect to be present, or will be represented by papers, are the following: Dr. C. C. Miller, Miss Emma Wilson, C. P. Dadant, F. Wilcox, Geo. E. Hilton, Morley Pettit, R. A. Morgan, W. Z. Hutchinson, J. J. Wilder, E. R. Root, N. E. France, M. E. Darby, Mrs. H. K. Beard, and others. It is expected that there will be, in addition to the usual very helpful question-box discussions, many short papers on subjects that are of deep interest to bee-keepers. This will help to start discussions that are sure to draw out much information that will be invaluable to those present. We hope it may prove to be a regular bee-keepers' rally. There are a great many bee-keepers who like to visit Chicago at least once a year, and this is a good time for them to come. The first session will be at 10:30 A.M., Dec. 1. Come, and help make it a large and profitable convention.

H. F. MOORE, Sec., Park Ridge, Ill.

GEO. W. YORK, Pres., Chicago, Ill.

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Just now, and until January 1, the price is 75 cts. a year; after January 1, \$1.00 a year. Why not save 25 or 50 cts. by sending 75 cts. or \$1.50 before January 1, and let us put your name on our list for one or two years from January 1? To new subscribers for 1910, we will throw in the rest of this year's (1909) numbers free. Better do it now. If you have never seen the old AMERICAN BEE JOURNAL, send for free sample copy. Address : : : : :

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# A Bee's Sting is Nothing Beside a Horse Trader's

and yet the "hoss trader" can "sting" you as easily in a horse trade or sale as an angry Syrian. If—you don't know how to protect yourself from this trickery as you know how to protect yourself from the sting of an angry bee. Dr. A. S. Alexander, famous veterinarian and a veteran in horse affairs, has prepared a book:

## "Horse Secrets"

which lays bare all the tricks and dodges of the "Gyps" and "hoss dealers" to cheat the innocent, and makes it easy to detect them in a trade or sale. No one need be imposed upon by any of them, for they are all here. And not only have the tricks been exposed, the legitimate "secrets" of the horse business are told also, so that in Dr. Alexander's book, you are not only shown how to avoid being cheated in a horse deal, but are told how to make the honest best of your horses.

Some of  
the  
Good Secrets



Some of  
the  
Bad Secrets

### The Secret of Hand Raising a Foal

How to raise a motherless foal on cow's milk.

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How to feed silage to Horses successfully and without danger.

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How to put draft horses in prime condition for sale or trade.

### The Secret of "Plumping" a Horse

How to put flesh on a run down horse—make him over again.

### The Secret of Stopping a Halter Puller

How to break a horse of this pernicious habit.

### The Secret of Breaking a Kicker

How to make the most vicious kicker safe for anyone to handle.

### The Secret of Curing Tail Rubbing

How to stop a horse from disfiguring tail and mane.

### The Secret of Hiding a Spavin

How to detect one of the commonest tricks in the business.

### The Secret of Plugging a Roarer

How to tell without fail when a roarer has been doctored up.

### The Secret of Shutting a Heaver

How to tell every time when a broken-winded horse has been fixed up.

### The Secret of the Widow Trick

A warning against this common method of "landing a sucker."

### The Secret of the Turpentine and Gasoline Tricks

How to tell when a footsore or muscle-sore horse is offered to you.

### The Secret of Wire Marking Over Sidebones

How to know when gashes on the hoof head mean more than they seem to.

### The Secret of Wedging a Cribber

How to discover a horse that has been treated for this bad habit.

The whole horse business has been raked fine for all "secrets," good and bad, so you may profit by the one kind and avoid the other. Everyone is liable at any day either to trade, buy or sell a horse, and everyone ought to read "Horse Secrets" *before* he does so.

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"Horse Secrets" was prepared for sale to present readers of the Farm Journal and for presentation to its new subscribers. The Farm Journal is alone in a class by itself among all farm papers. It gives its readers 24 to 60 pages every month of live farm news and practical information, boiled down to the fewest possible words so that you get the meat of the matter at once. Theory is left out and practical matter only put in. Every editor is an authority in his or her department. No medical or vicious advertising is accepted, and every advertisement is guaranteed.

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